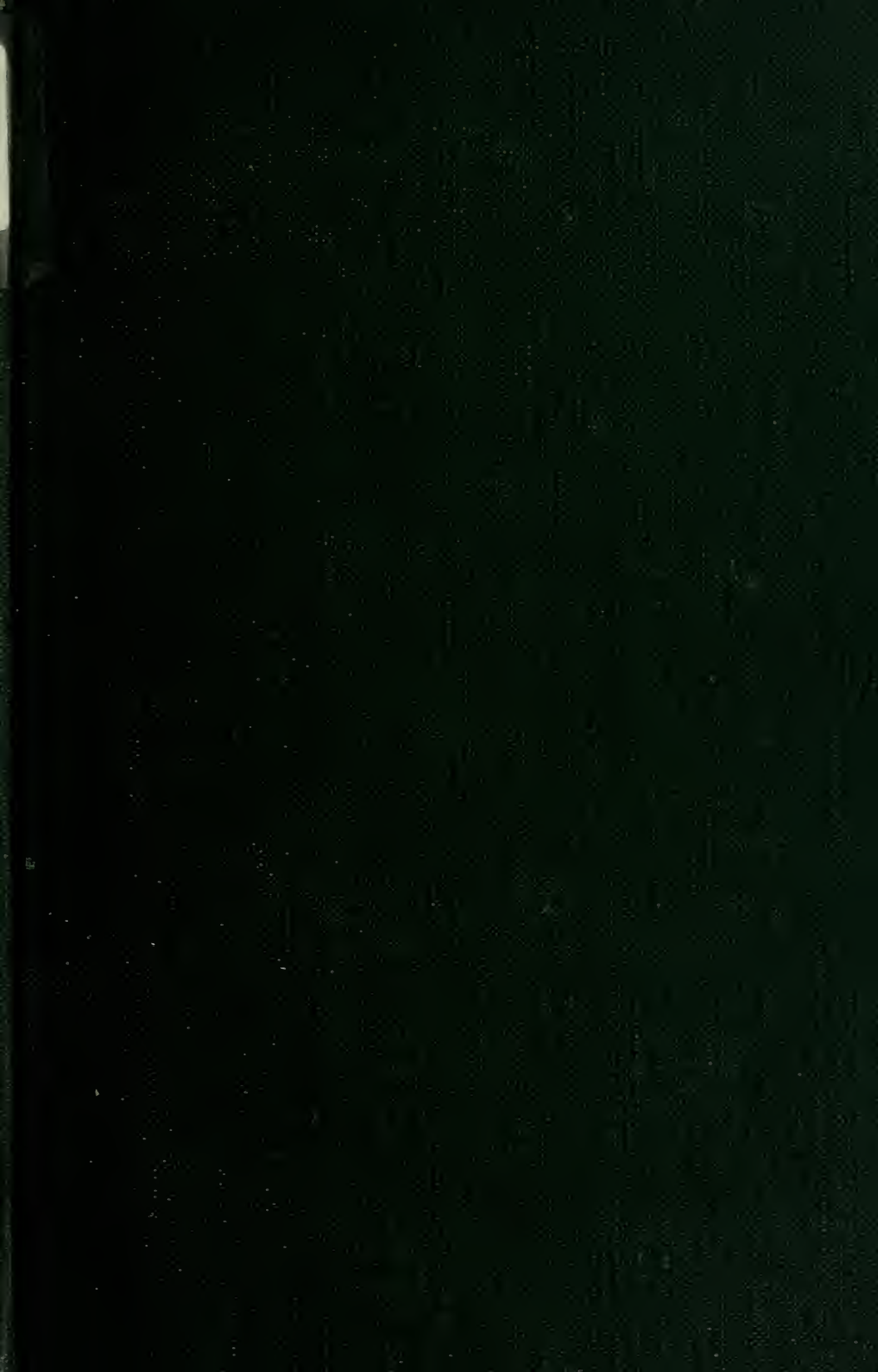




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DEPARTMENT OF EDUCATION

City and County of San Francisco

STATE OF CALIFORNIA

# COURSES OF STUDY

DAY ELEMENTARY

SCHOOLS

AUGUST 1907



DEPARTMENT OF EDUCATION

City and County of San Francisco

STATE OF CALIFORNIA

# COURSES OF STUDY

Day Elementary Schools

AUGUST, 1907

HAYDEN PRINTING CO.  1130 MISSION STREET.

Presented by the Office of the  
Superintendent of Schools

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Adopted by the Board of Education

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COURSES OF STUDY  
FOR THE  
DAY ELEMENTARY SCHOOLS

1942

# COURSES OF STUDY FOR THE DAY ELEMENTARY SCHOOLS.

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## GENERAL INTRODUCTION.

---

Every effort has been made to reduce the necessary amount of work in the Course of Study. In every part of the civilized world the daily programme of the school seems crowded. The list of subjects is no briefer in Japan than in England, in England than in Germany, in Germany than in America, in New York than in California. Everywhere the course is full, for modern life is complex and preparation for it requires a variety of subjects. This makes a large demand upon the teacher's time and strength. We have greatly lessened this demand by cutting much dead wood from the course of Study. A minimum course has been prepared which may be taught in all schools in the required time. Some schools may do more, and materials and methods of amplification are indicated in the proper place under Nature Study, History, Geography, Composition and Literature. Teachers are expected to get *the spirit of this course* and *the aim of each subject* taught in order that the supplemental work may be of the right character. Do not dwell upon things which are intentionally omitted: they may have value, but they are omitted to make room for matter of greater value.

Much is omitted in Arithmetic in order that life problems and life conditions may be taught. Geography is no longer a memoriter subject; it is descriptive, industrial, commercial, economical. Do not overdo the technicalities of grammar; give power of thought and of oral and written expression. To make the burden of this work as light as possible the best supplemental books are provided. Supplemental reading is provided in order that the child may learn to read by reading much. Optional literature is suggested in order that a few pieces may not be worn threadbare by over-critical study. Large movements and causal relations are to be emphasized in History. The parallel reading will add interest to the work. It is hoped soon to supply more books in History. The purpose of Nature Study is best accomplished by naturalizing the *entire* course, by making all teaching, when possible, concrete, by appealing to things rather than mere words. Naturalize all your teaching, then do as much nature study as time will permit.

In a system of schools where children pass from teacher to teacher and from school to school, uniformity of aims and

a certain uniformity of methods are essential in order that the time of children be not wasted. As much freedom is left to the individual teacher as is consistent with co-operation. Teachers are expected to know the Course of Study. They must build upon what is already done; they must prepare for work yet to come. Thus the proper reading of whole numbers prepares for the writing of decimals; long division prepares for pointing off in the division of decimals; every step in Grammar rests upon the preceding work. Every teacher of an upper grade must continue methods begun in the lower. Principals must have a very thorough knowledge of the entire Course of Study.

No subject is completely taught in any class, whether primary, grammar, high school or college. Whenever new material is to be added the old must be reviewed and enlarged. Do not misjudge the work of those who have had the children before you. The children were less mature and there has been a lapse of time. The apparent defect in the work of the previous teacher may be only a lack of review on your part or failure to understand her methods.

High school teachers should have a fair knowledge of the grammar grade work upon which they are to build. Geography is not all taught under that subject; much more must be taught with the History. Much of the technical part of English Grammar (Part III) is intentionally left for the high school. Its chief use is in high school subjects and it can best be taught by those who are to use it. But unless the grammar school work is to be thrown away, the high school teacher must know what has been done and how it has been done. Twelve weeks shall be given to grammar in the first term of the high school. The literature in the grades is extensive rather than intensive, and so the extensive method should prevail in the first year of the high school.

This course of study is substantially a reprint of the course of 1905 with the introduction of the new State textbooks and such modifications as the experience of the last two years seems to warrant.

## INTRODUCTION TO READING AND LITERATURE.

---

Reading is the most important of all school subjects, because upon the pupil's ability to read depends in a large measure his success in all other work. Generally it begins in the lower grades with word calling instead of thought getting. Too often it continues through the grades to be mere word calling. Teachers getting the thought from the open text fail to realize that the pupil's voice expresses no real meaning.

Good reading should be a vocal diagram of the sentence showing the important parts, the subordinate parts, and the relations between the component elements of the sentence. Words out of their usual order (inverted expressions) are followed by a pause. New, important, or contrasted parts receive emphasis. The main parts of the thought are read in full voice, subordinate or parenthetical parts are rendered in lower tone and at a more rapid rate. Contrasted expressions take opposite inflections. Continuance of meaning is indicated at a pause by rising inflection or suspended voice. Falling inflection indicates completeness of meaning, but doubt or uncertainty is shown by rising inflection. Light and shade in a sentence are indicated by pitch; joyful thought taking higher pitch, and sadness falling into the lower tone. Thus every sentence well read becomes a word picture having its perspective, its light and shade.

Our thinking and our silent reading are generally in words as they sound to us in our own voice. If the child's oral reading is not made rich and expressive his thought becomes a monotone. Nearly all of what we read has in it an element of emotion. The voice that has not learned to express emotion does not think fully the emotion of the printed page. The great purpose of oral reading, then, is to make the pupil a master of silent reading.

Good reading should be interpretive, not elocution, mimicry, or dramatic representation. The well trained voice becomes the greatest aid in the study of literature. The finer shades of meaning are found only by reading aloud or in the silent voice of thought.

Since reading is thought getting, every subject taught furnishes material for drill in reading. This oral drill becomes

gradually less as the pupil acquires the fuller power of thought getting.

In the regular reading lesson the pupil must be trained to find the principal thought of the paragraph, express this in a paragraph heading, relate subordinate thoughts to the chief one, and connect paragraph topics in the larger thought of the selection. In the same way must he be trained with open book to study history and geography. He must be made to read aloud examples in arithmetic, expressing by emphasis, inflection, and pauses the conditions given and the thing required. An example well read is more than half worked. Pupils fail in history, geography and arithmetic because they cannot read. Make haste slowly, and accelerated speed will result.

The best incentive to good oral reading is a listening audience. Such audience is lacking when each child has prepared the lesson and sits with open book only to find fault with the reader. We advise that one or two lessons each week be devoted to easier supplementary or sight reading where the class listen and only the child who reads sees the book. A few books of the same kind could be assigned to as many pupils who prepare to read to the class. (A list of suitable books for this work in these grades is appended.) The class should be questioned on the reading. The regular reading lesson thus becomes a drill for the reader's audience, the class. In the reading lesson pupils should at times listen with closed books and tell whether the reader got from the page the same thought which they did. Did he express the thought? Where did he fail? Who will read to express a different thought?

Throughout the Third, Fourth and Fifth Grades, as in the preceding ones, reading should be taught as a process of thought getting. The first essential is that the child know the meaning of all words. It is a mistake, though, at this time, to send the child unaided to the dictionary. He becomes confused by the different meanings of the words, and the chance of his getting the wrong meaning is too great. For grasping the meaning of words, the teacher and the context are the best dictionaries. When he is asked, the teacher should give the meaning from the context first, then illustrate that meaning with sentences while the idea is still fresh in the child's mind.

#### STUDY-RECITATION.

The study period in reading as commonly used is largely time wasted. Children do not know how to study a reading

lesson. Careful preparation for study should be made when the lesson is assigned. This may be done by giving such information as will make the lesson intelligible, by questioning to awaken interest, by explaining difficult words and phrases, by reading and explaining difficult paragraphs, or by reading aloud to the class the entire lesson interpreting by good tones and modulations.

Whether we read aloud or silently we read in terms of voice. If the lesson is not understood by the children, the more it is studied the deeper become the wrong impressions. The time of a recitation period is often too short to eradicate the errors of study.

The study-recitation has been productive of excellent results in reading. If the teacher has her pupils in one class the period is lengthened to include both study period and recitation. Each stanza or paragraph is made the subject of study and recitation before the next is taken up. Look over the first paragraph. Are there any words whose meaning you do not understand or do not know how to pronounce? (Any very difficult ones the teacher explains without asking.) Teacher explains these words using the context, similarity to other words and herself using the word in several ways. Now read over the paragraph and see if you understand fully the meaning of it. Any questions? Teacher explains these. Now study it for two minutes. It is now read by two or three pupils, the class listening with closed books and offering suggestions. Each paragraph is studied and read in this way. Tomorrow we will review this lesson and see how well you can bring out the meaning.

Two sections in reading or two different grades may be taught at the same time. The teacher prepares the first paragraph for study with Section A, then while Section A is studying this paragraph she prepares Section B for the study of its first paragraph. Then A reads its paragraph while B studies, and so alternately throughout the lessons in both sections.

The study-recitation is very strongly recommended where classes are poor in reading.

Passing now to the subject of advanced reading, the B Sixth, Seventh and Eighth grades of the grammar school should be given to a study of complete works of literature. Three or four periods per week should be given to selections difficult enough to require close study with class recitation and discussion to get the hidden beauties, the more delicate shades of meaning, the greater breadth of appreciation and interpretation. One or two periods per week should be given to simpler literature. This may be read out of school from

outline, questions, or suggestions from the teacher and discussed in class. Either teacher or pupils may read to the class. Parts of books may be read to pupils to awaken interest in them. To the same end pupils may discuss books they are reading at home or read selections from them. This reading should include such a variety of books as will appeal to different tastes. The aim is to create a love for good literature such as the tired man or woman may read for pleasure and profit. Few of our pupils will be people of leisure; they will find some time for study, but more for recreative reading.

Each class should be given a list of good books, and these as fast as possible should be placed in the school library. Encourage pupils to purchase for their own private libraries.

#### CLASSICS.

The general method of presenting these classics should rest upon the assumption that the function of literature is the development of character rather than intellectual power. Literature is addressed to the heart, to the conscience, rather than to the intellect. We should recognize that a poem no less than a painting is an art form, an organic thing. The life of a true poem is spiritual in nature, appealing to the spiritual within us. The appeal of good literature is very similar to the appeal of good music. And as the piano is required to actualize the beautiful "Moonlight Sonata" of Beethoven with all its mysterious spiritual surges and cadences, so the human voice with its richness and flexibility is required to actualize Whittier's *Snow-Bound* in all its supremely spiritual power.

These conclusions point to a practical end. Since an art-form is an organic thing, a poem should first be grasped as a literary whole. The voice is needed to convey the spiritual element of the poem to the spiritual within us. Then the first step in the presentation of a literary masterpiece would seem to be a sympathetic oral rendering of it, in whole or in part, by the teacher, because, she can grasp and express the art-form of the author better than the children. During this reading no comments should be made. Present the production in its organic unity and the resulting impression will be fine and strong.

The story element having been satisfied by this reading, the pupils are ready to undertake the work of making the classic their own. Instead of telling them to look up all unfamiliar words and expressions, it would be better to place

upon the board a list of the words that need study. These words should be followed by a series of carefully prepared questions designed to bring out the author's thought as fully as possible.

One of the reasons for the failure to secure thoroughly satisfactory results in literature rests in the practice of treating each masterpiece independently. While most of the other studies provide for systematic reviews and enlargements of the topics treated, no adequate plan has been offered for similar work in literature. We believe that an attempt should be made to provide such a plan. By cross references, comparisons, and suggestive questions, the past work is brought to bear upon the subject in hand. This not only reviews and renews the past work, but it also adds strength and interest to the new. For instance, Lowell's couplet in *The Vision of Sir Launfal*,

"Not what we give but what we share,  
For the gift without the giver is bare."

naturally suggests Ruskin's lines in *The King of the Golden River*:

"The water which has been refused to the cry of the weary and dying is unholy, though it had been blessed by every saint in heaven; and the water which is found in the vessel of mercy is holy, though it had been defiled with corpses."

Still further preparation should be made in determining the relative values of the several parts of a selection. The teacher may open this work by comparing a selection with its primary and secondary materials to a picture in which the primary materials are known as the "foreground" while the secondary form the "background." Since in reading the selection the voice must furnish both, the teacher should evolve the principle that the parts of primary importance (the foreground) should be given a full tone and be read slowly; while the parts of secondary importance (the background) should be read more rapidly and in a lower tone. This work must precede effective oral practice at either home or school.

When the thought work on the words and questions has been completed and the relative values of the several parts of the selection determined, the pupils are ready to read. Impress upon the children that the primary purpose of oral reading is entertainment. Invite criticisms, both in approval and disapproval of the reading. These criticisms should not be too technical; the general impression should be sought. The members of the class may point out that the reading was appreciative or mechanical, that the movement was good or too fast or too

slow, that the secondary materials were properly subordinated or that the reading was monotonous. By requiring children to form definite opinions upon the reading of their classmates noting both the good and the weak points, improvement in their own reading will readily follow. This work should be handled in a judicious, sympathetic way so as not to wound the readers and develop self-consciousness in them.

The method thus briefly outlined is intended to be suggestive merely. Other means of securing literary appreciation and effective oral rendering will spring from the needs of the class and the originality of the teacher.

## OUTLINE IN READING AND LITERATURE.

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### A FIRST GRADE.

During first half term pupils read print only. Use no diacritical marks. The blackboard sentence and the printed page which the child reads should be without diacritical marks. There should be much ear and voice drill; children should be made to hear sounds distinctly, then utter them clearly. Avoid the high-pitched voice so often heard in the primary room; keep the child's voice at a natural pitch. First year pupils should not often be required to read so as to be heard across a large school room. It is better to gather them in groups about the teacher. Avoid so-called spelling by sound. Do not separate the sounds of a word in pronouncing. Clear, distinct pronunciation by the teacher is the best aid to the child in understanding and uttering a word. Do not overstress the obscure vowel sound in "a" and "the". It is better to err on the side of letting him give the long vowel, for this will soon be obscured without special drill. Let the article always be pronounced with the noun.

Use many action sentences. These show the grasp of thought; the child may pronounce all the words without relating them so as to convey to him the meaning of the sentence. When he has acted the sentence he may then read it aloud. The thought has been grasped and his reading will convey meaning. Give much attention to phrasing or grouping of words and to natural pauses.

Children should not spell during the first term.

During the first term prepare for writing by much drill in movement exercises at board and at seats. Begin writing at board the second term. Make all composition oral, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, etc.

The work of this term will be based on blackboard work, sentence builders for busy work at seats (words printed on strips of cardboard), Natural Reading Primer and Manual, and the State Primer. The following order of taking up the work is suggested:

(1) For about six weeks, blackboard reading as outlined in Natural Reading Manual to page 11.

(2) For about three weeks, blackboard reading and phonetic drill, Manual to page 17; Natural Reading Primer to page 35.

(3) For about four weeks, blackboard reading, action sentences, and phonetic drill, Manual to page 32; Natural Reading Primer to page 50; State Series Primer to page 21.

(4) For about eight weeks, blackboard reading, action sentences, several children acting three or four sentences put on the board, and phonetic drill, Manual to page 51; Natural Reading Primer to page 80.

If classes can do so easily, the State Series Primer may be completed the first term. The work must be done thoroughly, step by step, as it lays the foundation for subsequent work. The chief work of the first year is reading.

## B FIRST GRADE.

Complete the State Primer. Complete State First Reader and one or more supplementary readers, using as suggestions Part III and the Appendix of the Natural Reading Manual. Have considerable acting from sentences and short stories on the blackboard, the children getting the thought by reading the stories to themselves. The class will be intensely interested to see if the actors perform according to the words on the board. Change the action by changing a word or two of your sentence or story to see if the children get the change of thought. The same sentence or story may give a variety of actions by a few changes of words. Change the words without rewriting the whole thing. Begin this work in a very simple form, increasing the difficulty very gradually. *Mary, give my book to Annie. Annie, take the book to John. John, put the book on my desk.* By changing a word or two the above sentences may be changed to read: *Mary, give your book to Annie. Annie, take the book to Henry. Henry, put the book on the chair.*

Begin oral spelling; written spelling should be left until the A Second Grade.

Begin writing at the blackboard, but omit writing at seats. All composition should be oral, as in A First Grade.

## A SECOND GRADE.

One-half of the *State First Reader* and half of two or three other readers. Give special attention to phrasing, natural

pauses, clear and distinct utterance and natural expression. Avoid the high-pitched voice. Give much practice in easy sight reading.

Begin written spelling in this grade, but let the work be largely at the blackboard. Take the spelling from reading and language lessons. Children should learn to spell the words they use. Continue *method* of the first year. The teacher should be very familiar with the *Natural Reading Primer* and *Manual*. Visit First Grade as often as possible.

## B SECOND GRADE.

Continue the work of A Second, completing the *State Second Reader* and the supplementary readers used in A Second. Any first reader not previously read will be good sight-reading in this grade (*Taylor's First Reader*).

## A THIRD GRADE.

The transition from the *State Second* to the *State Third Reader* is somewhat difficult. To bridge this spend five or six weeks on any good supplementary reader not previously studied or read. (*Child Life Second Reader*).

Read first forty pages of *State Third Reader*.

For supplementary reading, *Stepping Stones to Literature*, *Third Reader* to page 63 and an equal amount in any other third reader.

## B THIRD GRADE.

Read from p. 40 to p. 100, *State Third Reader*. Supplementary reading, *Stepping Stones to Literature*, *Third Reader* to page 137 and an equal amount of any other third-year reading matter.

## A FOURTH GRADE.

Read *State Third Reader*, pp. 100 to 172. Supplementary reading, *Stepping Stones to Literature*, *Third Reader*. Complete the book and read half of *Great Americans for Little Americans*.

## B FOURTH GRADE.

State *Third Reader* from p. 172 to p. 260. Supplementary reading, complete *Great Americans for Little Americans* and an equal amount of other supplementary reading.

## A FIFTH GRADE.

Read the *State Fourth Reader* to p. 108 and one-half of *State Series Primary History*. Supplementary reading from History, Geography and other books.

## B FIFTH GRADE.

Read *State Fourth Reader* from p. 108 to p. 229 and the last half of *State Series Primary History*. Supplementary reading from History, Geography and other books.

## A SIXTH GRADE.

Complete the *State Fourth Reader*; \**Lays of Ancient Rome* (5-cent Classics); \**King of the Golden River* (Heath's Home and School Classics); supplementary reading from History and Geography.

## B SIXTH GRADE.

1. *Miles Standish* (10-cent Classics).
2. \**Water Babies*, by Kingsley (Maynard's English Classic Series).
3. \**Lamb's Tales from Shakespeare* (Maynard's English Classic Series).†
4. \**A Hunting of the Deer*, by Warner (Riverside Series).

## A SEVENTH GRADE.

1. *Wonder Book, I, and II* (Riverside Series).
2. \**Coming of Arthur and the Passing of Arthur* (Maynard's English Classic Series).
3. *Benjamin Franklin's Autobiography, Part I* (Riverside Literature Series).

\* May be taken or omitted at the option of teacher.

† This contains *The Tempest*, *Merchant of Venice* and *King Lear*. Teachers who want more selections may ask the children to get the 10-cent Classic Edition, Vol. 1. Educational Publishing Co.

## B SEVENTH GRADE.

1. *Longfellow Leaflets* ("Building of the Ship" and one-half of shorter poems) (Riverside Series).
2. *Rip Van Winkle* and *Sleepy Hollow* (Graham's Practical Aids to Literature, No. 1).
3. \**Goldsmith's Deserted Village* (5-cent Classics).
4. \**A Dog of Flanders* (Riverside Edition).

## A EIGHTH GRADE.

- Evangeline* (Riverside Series).  
*Dickens' Christmas Carol* (10-Cent Classics).  
 \**Selections from Eleven American Authors* (Riverside Series No. 87 Extra. [N.]).  
 \**Merchant of Venice*.

## B EIGHTH GRADE.

- Snow Bound* (Riverside Series).  
*Shakespeare's Julius Caesar* (10-cent Classics).  
*Irving's Alhambra* (Macmillan's Pocket Classics).  
 \**Scott's Lady of the Lake*.

## LIST OF BOOKS TO SUPPLEMENT THE THIRD AND FOURTH READERS.

- Jackanapes, Ewing.  
 Jan of the Mill, Ewing.  
 Story of a Short Life, Ewing.  
 Bits of Talk for Young Folks, Jackson.  
 Among the Camps, Page.  
 At the Back of the North Wind, McDonald.  
 The Princess and the Goblin, McDonald.  
 The Princess and the Curdie, McDonald.  
 The Eugene Field Book, Edited by Burt.  
 Wilderness Ways, William J. Long.  
 Ways of Wood Folk, William J. Long.  
 A Christmas Carol, Dickens.  
 The William Henry Letters, Diaz.  
 Mill on the Floss, Eliot.  
 The Pied Piper of Hamelin, Browning.  
 Black Beauty, Sewell.

\* May be taken or omitted at the option of teacher.

† This contains *The Tempest*, *Merchant of Venice* and *King Lear*. Teachers who want more selections may ask the children to get the 10-cent Classic Edition, Vol. 1. Educational Pub. Co.

Trotty and Gypsy Book, Phelps.  
The Little Lame Prince, Mulock.  
Biography of a Grizzly, Seton.  
Wild Animals I Have Known, Seton.  
Rab and his Friends, Brown.  
Dog of Flanders, Ouida.  
Birds' Christmas Carol, Wiggin.  
Rose and the Ring, Thackeray.  
Among Old Story Tellers, Mitchell.  
Treasure Island, Stevenson.  
New Arabian Nights, Stevenson.  
The Water Babies, Kingsley.  
Being a Boy, Warner.  
Tales of a Grandfather, Scott.  
Captain January, Richards.  
Melody, Richards.  
Little Lord Fauntleroy, Burnett.  
Little Marjorie's Love Story, Bouvet.  
Toby Tyler, Otis,  
Sweet William, Bouvet.  
The Hoosier Schoolboy, Eggleston.  
Fifty Famous Stories Retold, Baldwin.  
Thirty More Famous Stories, Baldwin.  
Homer's Stories, Hall.  
Swiss Family Robinson, Wyss.  
Donald and Dorothy, Dodge.  
Little Women, Alcott.  
Little Men, Alcott.  
Timothy's Quest, Wiggin.  
Prince Tip Top, Bouvet.  
Old Stories of the East, Baldwin.  
Jungle Book, Kipling.

In the Sixth, Seventh and Eighth grades read to the children other works from the author whose masterpiece is being studied in class. Try to give a taste for the author's works. Study the author's life after reading his work. His writing should illustrate his character and interest the pupils in the man himself.

### MEMORY SELECTIONS.

Three poems are to be memorized each term. It is recommended that pupils purchase Miss Alice Power's Poems for Memorizing, which contains the poems required in all the grades.

Two kinds of selections should be used:

*First*—Complete selections in poetry or prose, such as *The Rainy Day*; and

*Second*—For grades above the Third, short terse sayings conveying some maxim or noble thought, such as: "One of the illusions is that the present hour is not the critical, decisive hour. Write it on your heart that every day is the best day of the year."—*Emerson*.

These two should be treated somewhat differently. The first is for memorizing and should be learned in whole or in part. In the case of long selections teachers may select parts, if they think best to do so. In each grade some attention should be given to teaching pupils *how* to memorize. Too many attempt to memorize words in the order in which they occur without regard to the thought involved. Selections to be memorized should be read aloud in a clear voice, with proper rhetorical pauses, and the thoughts involved should be explained by the pupils. Pupils should be encouraged to memorize by sentences, paragraphs or stanzas at once. Before the selection has been learned there should be much attention to the proper delivery of it. Pupils should be trained from the first to repeat many of the selections from the platform or the front of the room and facing the class. Such drill will have a tendency to prevent the growth of self-consciousness. There should be distinct articulation and proper emphasis and inflection. A few of the quotations, such as "Sweet and Low," or "Landing of the Pilgrims," are best learned as songs.

With the second form of selection for memorizing, the short quotation, it is not so important that there be recitation or memory drill. The quotation should be written on the blackboard by the teacher, giving the author. Teachers are at liberty to make their own selections, but the quotations used should not exceed eight lines of poetry or prose and should be of a distinctively high order. An average of one short quotation a week should be placed on the blackboard. These should be copied by the pupils into a blank book or on paper set apart for that purpose, and the copying should be done as a part of the work in penmanship. It is not necessary that each one of these be memorized to make the desired impression. Teachers may use discretion in the matter, though many of the quotations should be committed to memory.

The following list of longer selections should be followed by teachers, and at least three each term should be memorized. For most of the selections one place where they may be found is indicated.

"W. & F." means Williams and Foster's *Selections for Memorizing*; "Child Life" means Whittier's *Child Life in Poetry and Prose* (Riv. Lit. Series, No. 70-71); "Peaslee" means Peaslee's *Graded Selections*; and "Ap. 4th R." means Appleton's *Fourth Reader*. Teachers may find additional material in the list that follows, or they may take selections from the literature which they are studying.

Stevenson, Robt. L. *A Child's Garden of Verse*.  
 Dodge, Mary Mapes. *When Life is Young*.  
 Field, Eugene. *Love Songs of Childhood*.  
 Riv. Lit. Series, No. 59. *Verse and Prose for Beginners*.

## FIRST GRADE.

|                                         |                         |                       |
|-----------------------------------------|-------------------------|-----------------------|
| Sweet and Low . . . . .                 | <i>Tennyson.</i>        | The Princess.         |
| The Owl and the Pussy Cat . . . . .     | <i>Edmund Lear.</i>     | Child Life.           |
| The Cloud . . . . .                     | <i>Unknown.</i>         | W. & F.               |
| Little by Little . . . . .              | <i>Unknown.</i>         | W. & F.               |
| Children . . . . .                      | <i>Longfellow.</i>      | Cyr's 2d R., Poems.   |
| Lazy Little Cloud . . . . .             | <i>Unknown.</i>         | W. & F.               |
| Sleep, Baby, Sleep . . . . .            | <i>From the German.</i> | Child Life.           |
| Booh . . . . .                          | <i>Fields.</i>          |                       |
| Runaway Brook . . . . .                 | <i>Eliza Follen.</i>    | Riv. Lit. Sr. No. 59. |
| The Baby . . . . .                      | <i>Geo. MacDonald.</i>  |                       |
| My Shadow . . . . .                     | <i>Stevenson.</i>       |                       |
| Sleep, Baby, Sleep . . . . .            | <i>Prentiss.</i>        |                       |
| Three Little Bugs in a Basket . . . . . | <i>Alice Cary.</i>      |                       |

## SECOND GRADE.

|                                          |                        |                 |
|------------------------------------------|------------------------|-----------------|
| The Children's Hour . . . . .            | <i>Longfellow.</i>     | Poems.          |
| Barefoot Boy (first ten lines) . . . . . | <i>Whittier.</i>       | Child Life.     |
| The Boy and the Bird . . . . .           | <i>Unknown.</i>        | W. & F.         |
| Rain Drops . . . . .                     | <i>Unknown.</i>        | W. & F.         |
| Seven Times One . . . . .                | <i>Jean Ingelow.</i>   | Child Life      |
| Two and One . . . . .                    | <i>Unknown.</i>        | Peaslee, p. 11. |
| The New Moon . . . . .                   | <i>Mrs. E. Follen.</i> | Child Life.     |
| Twinkle, Little Star . . . . .           | <i>Unknown.</i>        | W. & F.         |
| If I Were a Sunbeam . . . . .            | <i>Lucy Larcom.</i>    | Poems.          |
| A Little Bit of a Fellow . . . . .       | <i>Stouton.</i>        |                 |
| To My Mother . . . . .                   | <i>Field.</i>          |                 |
| The Night Wind . . . . .                 | <i>Field.</i>          |                 |
| The Lullaby . . . . .                    | <i>J. G. Holland.</i>  | Ecl. 2d R.      |

## THIRD GRADE.

|                                      |                        |                        |
|--------------------------------------|------------------------|------------------------|
| The Brown Thrush.....                | <i>Lucy Larcom.</i>    | W. & F.                |
| The Wonderful World.....             | <i>Browne.</i>         | S. S. 3d R.            |
| Is It You?.....                      | <i>Unknown.</i>        | W. & F.                |
| By and By.....                       | <i>Unknown.</i>        | W. & F.                |
| I Once Had a Sweet Little Doll . . . | <i>Chas. Kingsley.</i> | Peaslee, p. 42.        |
| Selections from the Brook.....       | <i>Tennyson.</i>       | Child Life.            |
| The Dandelion.....                   | <i>Unknown.</i>        | Classic Stories, p. 94 |
| If Ever I See.....                   | <i>Lydia M. Child.</i> | Nature in Verse.       |
| Drive the Nail Aright.....           | <i>Unknown.</i>        | W. & F.                |
| Wynken, Blynken and Nod.....         | <i>Eugene Field.</i>   | S. S. 3d R.            |
| Little Brown Hands.....              | <i>M. H. Krout.</i>    | Child Life.            |
| Suppose.....                         | <i>Cary.</i>           | W. & F.                |
| America.....                         | <i>Smith.</i>          | W. & F.                |
| Lost.....                            | <i>Celia Thaxter.</i>  | Poems                  |
| Don't Give Up.....                   | <i>Phæbe Cary.</i>     | Poems.                 |

## FOURTH GRADE.

|                                   |                        |                  |
|-----------------------------------|------------------------|------------------|
| The Happiest Heart.....           | <i>Cheney.</i>         | S. S. 4th R.     |
| Something Left Undone.....        | <i>Longfellow.</i>     | Poems.           |
| Suppose My Little Lady.....       | <i>Phæbe Cary.</i>     | Peaslee, p. 36.  |
| Boys Wanted.....                  | <i>Unknown.</i>        | W. & F.          |
| The Fountain.....                 | <i>Lowell.</i>         | Poems.           |
| Three Companions.....             | <i>Dinah M. Craik.</i> | Cyr's 3d R.      |
| A Life Lesson.....                | <i>Riley.</i>          | Afterwhiles.     |
| Fiftieth Birthday of Agassiz..... | <i>Longfellow.</i>     | Poems.           |
| The Sculptor.....                 | <i>Bishop Doane.</i>   | Peaslee, p. 83.  |
| Another Blue Day.....             | <i>Carlyle.</i>        | Peaslee, p. 110. |
| The Barefoot Boy.....             | <i>Whittier.</i>       | S. S. 4th R.     |
| A Night with a Wolf.....          | <i>Bayard Taylor.</i>  | Child Life.      |
| The Good Time Coming.....         | <i>Chas. Mackay.</i>   | W. & F.          |
| The Brook and the Wave.....       | <i>Longfellow.</i>     | Poems.           |
| The Children's Hour.....          | <i>Longfellow.</i>     | Poems.           |

Short Quotations on the Blackboard.

## FIFTH GRADE.

|                             |                      |              |
|-----------------------------|----------------------|--------------|
| Breathes There a Man.....   | <i>Scott.</i>        | W. & F.      |
| The Village Blacksmith..... | <i>Longfellow.</i>   | S. S. 4th R. |
| Break, Break, Break.....    | <i>Tennyson.</i>     | Poems.       |
| The Vicar's Sermon.....     | <i>Chas. Mackay.</i> | W. & F.      |
| The Three Fishers.....      | <i>Kingsley.</i>     | Ap. 4th.     |

|                              |                          |                  |
|------------------------------|--------------------------|------------------|
| Nobility.....                | <i>Alice Cary.</i>       | W. & F.          |
| Arrow and the Song.....      | <i>Longfellow.</i>       | Poems.           |
| Landing of the Pilgrims..... | <i>Mrs. Hemans.</i>      | W. & F.          |
| How Sleep the Brave.....     | <i>William Collins.</i>  | W. & F.—Ap. 5th. |
| One by One.....              | <i>Adelaide Proctor.</i> | W. & F.          |
| The Builders.....            | <i>Longfellow.</i>       | Poems.           |
| The Will and the Way.....    | <i>John G. Saxe.</i>     | Peaslee, p. 114. |
| My Books.....                | <i>John G. Saxe.</i>     | Poems.           |
| Childhood's Gold .....       | <i>Lucy Larcom.</i>      | Poems.           |
| The Light That is Felt.....  | <i>Whittier.</i>         | Poems.           |
| Decoration Day .....         | <i>Longfellow.</i>       | Poems.           |
| Somebody's Mother.....       | <i>Unknown.</i>          | W. & F.          |
| The Heritage.....            | <i>Lowell.</i>           | Poems.           |
| Telling the Bees.....        | <i>Eugene Field.</i>     | Poems.           |
| XXIII Psalm.....             |                          | Bible.           |

Short Quotations on the Blackboard.

#### SIXTH GRADE.

|                                     |                       |                  |
|-------------------------------------|-----------------------|------------------|
| Thanksgiving Hymn for California    | <i>Mrs. Stetson.</i>  |                  |
| The Day is Done (Selections from)   | <i>Longfellow.</i>    | Poems.           |
| The Last Leaf (Selections).....     | <i>Holmes.</i>        | Poems.           |
| Ring Out, Wild Bells.....           | <i>Tennyson.</i>      | W. & F.          |
| Soldier, Rest.....                  | <i>Scott.</i>         | Ap. 4th R.       |
| There is Ever a Song Somewhere..    | <i>Riley.</i>         | Afterwhiles.     |
| The American Flag.....              | <i>Drake.</i>         | Peaslee, p. 182. |
| The Rainy Day.....                  | <i>Longfellow.</i>    | Poems.           |
| Burial of Sir John Moore.....       | <i>Wolfe.</i>         | Ap. 4th R.       |
| Over and Over Again.....            | <i>Pollard.</i>       | W. & F.          |
| Psalm of Life.....                  | <i>Longfellow.</i>    | Poems.           |
| Another Blue Day.....               | <i>Carlyle.</i>       | Peaslee, p. 110. |
| Love of Country.....                | <i>Scott.</i>         | Peaslee, p. 188. |
| Order for a picture (Selections)... | <i>A. Cary.</i>       | Poems.           |
| A Night With a Wolf.....            | <i>Bayard Taylor.</i> | Child Life.      |

Short Quotations on the Blackboard.

#### SEVENTH GRADE.

|                                                  |                        |              |
|--------------------------------------------------|------------------------|--------------|
| Vision of Sir Launfal (24 lines on<br>June)..... | <i>Lowell.</i>         | S. S. 4th R. |
| Westward—Columbus.....                           | <i>Joaquin Miller.</i> | S. S. 4th R. |
| Landing of the Pilgrims.....                     | <i>Mrs. Hemans.</i>    | W. & F.      |
| Bugle Song.....                                  | <i>Tennyson.</i>       | W. & F.      |

|                               |                        |              |
|-------------------------------|------------------------|--------------|
| To a Skylark.....             | <i>Shelley.</i>        | Poems.       |
| Sail On, O Ship of State..... | <i>Longfellow.</i>     | Poems.       |
| What Constitutes a State..... | <i>Jones.</i>          | W. & F.      |
| Crossing the Bar.....         | <i>Tennyson.</i>       | Poems.       |
| Sound of the Sea.....         | <i>Longfellow.</i>     | Poems.       |
| The Chambered Nautilus.....   | <i>Holmes.</i>         | Poems.       |
| Song of Marion's Men.....     | <i>Bryant</i>          | Poems.       |
| Warren's Address.....         | <i>Pierpont.</i>       | W. & F.      |
| Daybreak.....                 | <i>Longfellow.</i>     | Poems.       |
| Liberty or Death (Parts)..... | <i>Patrick Henry.</i>  | Ap. 5th R.   |
| Concord Hymn.....             | <i>Emerson.</i>        | S. S. 4th R. |
| Woodman Spare That Tree.....  | <i>Geo. P. Morris.</i> | W. & F.      |
| Abou Ben Adhem.....           | <i>Leigh Hunt.</i>     | Ap. 5th R.   |

Short Quotations on the Blackboard.

#### EIGHTH GRADE.

|                                                          |                         |                          |
|----------------------------------------------------------|-------------------------|--------------------------|
| My Captain.....                                          | <i>Whitman.</i>         | Poems.                   |
| Thanatopsis (Selections).....                            | <i>Bryant.</i>          | Poems.                   |
| A Man's a Man for a' That.....                           | <i>Burns.</i>           | Poems.                   |
| Remembered Music.....                                    | <i>Lowell.</i>          | Poems.                   |
| To a Water-Fowl.....                                     | <i>Bryant.</i>          | S. S. Gram. p. 60.       |
| Old Ironsides.....                                       | <i>Holmes.</i>          | W. & F.                  |
| Battle Hymn of the Republic.....                         | <i>Julia Ward Howe.</i> |                          |
| Liberty and Union.....                                   | <i>Webster.</i>         | W. & F.                  |
| The Shell.....                                           | <i>Tennyson.</i>        | H. of Oak. VI.           |
| Self Dependence.....                                     | <i>Matthew Arnold.</i>  | H. of Oak III;<br>Poems. |
| Sun and Shadow.....                                      | <i>Holmes.</i>          | Poems.                   |
| Address at Gettysburg.....                               | <i>Lincoln.</i>         | W. & F.                  |
| The Way to Heaven.....                                   | <i>Holland.</i>         | W. & F.                  |
| Selections from The Elegy.....                           | <i>Gray</i>             | Ap. 5th R.               |
| True Rest.....                                           | <i>Goethe.</i>          | Peaslee, p. 169.         |
| Flower in the Crannied Wall.....                         | <i>Tennyson.</i>        | Poems.                   |
| The Present Crisis (Stanzas 1, 5, 6,<br>11, 15, 18)..... | <i>Lowell.</i>          | Poems.                   |
| The Hand of Lincoln.....                                 | <i>E. C. Stedman.</i>   | Poems.                   |
| The Ladder of St. Augustine.....                         | <i>Longfellow.</i>      | Poems.                   |
| Contentment.....                                         | <i>Lucy Larcom.</i>     | S. S. 4th R., p. 109.    |
| The Recessional.....                                     | <i>Kipling.</i>         |                          |

Short Quotations on the Blackboard.

## PARALLEL READING.

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Books in sets of five or six will be supplied for parallel reading in history and geography.

The purpose of these books is three-fold: To vitalize the texts in history and geography by giving clear, vivid word pictures, to supply good prose for reading to a listening audience, to supply models of style and material for oral and written composition.

The teacher will make a selection pertaining to the day's lesson. A number of the class will read (at sight or after preparation) while the rest listen. Whenever the reading is not heard or understood, the class will raise hands. To insure attention, the teacher will question members of class during the reading. On the completion of the reading or a *rereading of the whole by the teacher*, part of the class will go to the board, while others work at the seats, reproducing what was read, making abstracts, or giving individual discussion of the matter read. This will be followed by oral criticism of the composition. Ten or fifteen minutes daily should be devoted to parallel reading. The writing and correcting may be part of the language lesson. The work in technical grammar has been shortened to allow for more composition. The periods for history, geography and language should be conveniently arranged for this work.

Selections for reproduction should not be too long; more should be read than is *reproduced* for composition. It is well frequently to put an outline of topics on the blackboard. Teach pupils to observe paragraph construction and to make their own outlines. Encourage them to correct their own composition by reading aloud or in a low tone.

## INTRODUCTION TO LANGUAGE AND COMPOSITION.

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One aim of education is correct thinking. Composition is training the child to *think* and to express his thoughts in good English. As reading should be from the first a thought-getting process, so composition should be always a thought-expressing process. Thinking must come before expression. Too often children are asked to express something when they have thought nothing. Even the formal drill for *fixing* certain forms in language should have a thought content. The teacher, therefore, must stimulate or awaken thought in the child before asking for its expression. The expression of the thought leads to greater clearness, so reforming and recasting the sentence, paragraph or composition gives better language and clearer thought. Correction is, therefore, an essential part of composition. It must, however, be only such as will help the child to better self-expression. Suit the corrections to the age and development of the child.

Essential to composition are meanings of words, sentence structures, thought, and motive or incentives for expression. The child learns oral language largely from what he hears; therefore must the teacher be a model of correct speaking. Written language is to a great extent an imitation of what the child reads. Thus is every reading lesson a teaching of composition. To be effective the child must be made observant of the meaning of words in their context, of the construction of sentences. Note how a repetition of words is avoided, why a sentence is inverted, and infinitive or participle used instead of a subordinate clause. Observe how the sentence is given unity, strength, clearness, adapting the work to the maturity of the grade. The child must observe the unity of a good sentence, then the unity of a good paragraph, and later the unity of a good selection. As he thus thinks in its completeness the thought of another, he acquires completeness in his own thought. What he learns, in his reading lesson, of sentence and paragraph structure he applies in his study of history and geography, and what he learns from these subjects reacts upon his own thought and expression. Since we think in language as it sounds to us, good oral reading is of utmost importance; and, since we think in sound, reading composition aloud is the best

method for its correction. Avoid all reading matter which contains bad grammar, such as dialect. Drill in correct forms till they *sound* correct to the child; then, as he reads his composition aloud, his ear will detect errors which would escape memorized rules of technical grammar.

The child acquires thought from all the subjects which he studies in school; therefore must all subjects be drawn upon for composition material. Even in arithmetic, instead of always giving the children examples from a book, they should often be required to make up and word well their own examples. Before writing, the child should think his subject through and through, stimulated by questions from the teacher or by class discussion. He should then arrange his thoughts, following unconsciously the models that have been put before him in literature, geography and history. Do not check freedom and originality of thought by over-criticism, but, on the other hand, do not allow the writing to become crude by haste or indifference. Mere volubility from tongue or pen is not in itself a virtue. Both thinking and expression need guidance.

Motive for expression is of utmost importance. Per cent, grading, promotion, scolding and adverse criticism never lead to best effort. With most children, particularly the younger ones, the teacher's approval is a great incentive. Hearty appreciation of the good leads to the better. An appreciative audience is the greatest stimulus to a speaker or writer. The child may not have an audience for everything he writes, but if the teacher and class are occasionally his listeners, then other written exercises take on new interest as preparation for such audience. If the effort is an honest one, something may always be found to commend, and correction must be helpful to the child in better thought and expression.

### ORAL COMPOSITION.

In the lower grades the composition should be largely oral, the written work increasing as the child advances from grade to grade. In the upper grades oral composition in large part takes the form of recitation. Correction in language should be made by quietly suggesting the right form and not by stopping the child's thought for a lecture on technical grammar. With a nervous or timid child the correction is best made at the close of his recitation. Occasionally exercises may be given for the express purpose of oral composition, subjects being assigned to look up and present to the class in talks. The subjects should always be such as will interest the listeners; thus

the speaker has an attentive audience. Debates may give practice in speaking. Children must be taught the use of authorities and reference books, preparation and arrangement of material, discrimination between argument and mere assertion, the difference between clear, forceful language and mere bombast. *Debate unguided often controverts its own purpose.*

## SUBJECTS FOR COMPOSITION.

Pictures are good subjects for composition, especially for young children. Teachers must be skillful in leading children to a correct reading of a picture. We all read print; comparatively few read pictures. The exercise may be merely to describe what is seen in the picture or to make a story suggested by the picture. When children are slow to begin the work the teacher should be ready to suggest several lines of treatment, then ask each child to invent his own. A general class lesson may be given from a picture large enough to be seen by all. Small pictures pasted on cards are distributed to the class and each child holds up his picture as he reads or tells the story.

A story is read or told to the children. They reproduce the story as told; tell it with some modifications of incidents, or make a similar story of their own. Literal paraphrasing is a bad exercise in composition.

Nature study from plants, animals, outdoor geography, school gardening, experiments and observations and visits to commercial and manufacturing establishments will give most interesting thought for expression. Observation here forms a basis for both writing and drawing.

Geography is full of good composition subjects. These should generally take the form of letters from points of travel. The mere skeleton of facts given in the text-book should be filled out from supplemental and parallel reading. The teacher should be always ready to suggest incidents that will give spice to such letters. Good letters of travel should be read to the class.

Reading and literature offer many good subjects. These are particularly useful for oral expression as a means for testing the power of silent reading. Attention must be constantly called to choice of words, structure of sentence and paragraph, paragraph topics and relation of paragraph topics to each other. Abstracting a prose selection tests the child's grasp of the thought. Character sketches, expanded descriptions or stories following the author as a model, all give power of thought and language. Current topics offer much of interest.

A committee for each day or week may be appointed to inform the class of important events. Their reports may be oral or written on the blackboard. Or a current topic paper may be prepared, editors being appointed for each week. This subject requires skillful handling. The teacher should possess an elementary knowledge of political economy and international law. Current history needs *interpreting* to be of any value to the children. Such work is recommended for the grammar grades.

The forms of business and social correspondence should receive much attention in the proper grades. These are the two forms of written composition which will be most used in after life. Our work is not to produce men of letters.

Much composition should be based on the parallel reading from history and geography. Half of the class should write at the board while the others write on paper.

Not everything the child writes need be corrected by the teacher. Encourage the children to find and correct their own errors before submitting to the teacher or to another pupil for criticism. Oral correction is most effective. Point out a few typical errors in several compositions; then have children look for similar ones in their own or their neighbor's work. Do not fail to commend excellence.

The following steps should be kept in mind as the aim of all good composition training:

1—Full reading, thought and collection of material. 2—Selection and arrangement before writing (outlining). 3—Free and spontaneous writing. 4—Careful criticism and revision. Most teachers aim at the third step, omitting the preparation. Many omit the fourth step, thus failing to make the pupil a self-critic. Some try to make the third and fourth step simultaneous, thus making the child self-conscious and the style stilted. The four steps are all necessary for the best originality.

Constant attention should be called to the qualities of good writing in history and literature. As the child learns to analyze the author's thought and perceive its arrangement, he masters the art of study, and this reacts upon his own power of thought and expression. Thus are all the Language Arts correlated.

To secure good composition the teacher must *stimulate* thought in her pupils and aid its better expression by appreciation and kindly criticism. Children must be aided to think clearly and to arrange their thoughts in good order.

There should be daily exercises in short composition, as far as possible on the blackboard. Two periods should be set aside each week for longer composition. The following steps are suggested for the longer compositions. These steps may extend over several periods; they may be modified for younger pupils:

1. Oral composition—discussion by teacher and class. In higher grades pupils present material from topics and references previously assigned; with younger pupils teacher reads or tells them material to be used in composition.

(a) Select point of view and wording of subject.

(b) Select topics, rejecting those not suited to point of view.

(c) Arrange topics to make best sequence.

With older pupils several points of view and sets of topics may be suggested. Thus guided they may use any of these or make new ones. With younger pupils and older ones *not* well-trained, many outlines on different subjects should be worked out on the blackboard.

This step may be one day's lesson.

2. First writing. Having thought and planned carefully, the pupil may now write freely and spontaneously.

3. Read aloud, correcting *by ear* as well as *by eye*. Many errors will be heard which would not be seen. In a room of fifty each pupil, after a little practice, will read his composition in a low tone without disturbing his neighbor. Ask each to make his composition as nearly perfect as possible before it leaves his hands.

4. Pass to neighbor, who reads aloud, making corrections and suggestions in pencil.

5. Return to writer, who looks over corrections and confers with critic regarding any he does not understand or agree with.

6. Appeal to teacher on any differences. The teacher discusses these questions and decides them. Each pupil thus gets instruction on the difficulties of the entire class, and not alone on his own careless blunders. The pupils thus become the justice courts of language, the teacher, the supreme court, gives instruction to all the class on appealed cases. The teacher's work is with matters where the pupils do not know or are in doubt. All this is done in class.

7. Several papers read, without criticism, for the *enjoyment* of the class.

8. Some mistakes may have escaped both writer and critic, so several compositions are then read aloud and criticised by teacher and class. Some sentences and paragraphs may be

worked over on the blackboard. The teacher gives suggestions regarding general plan and arrangement of composition showing how to make it better. Special attention is called to *good qualities*.

9. The class now rewrite their compositions, using all the suggestions obtained from each other and the teacher. These are written in the composition book, writing on the left-hand page only.

10. Teacher corrects the composition in book or folder, indicating errors by marginal signs, thus, S for spelling, C for capitals, G for grammar, P for punctuation, ¶ for paragraph, Wd for choice of words, etc.

11. The pupil then copies composition on the right hand page, finding and correcting errors. To encourage careful work a check mark at the top of a page indicates that only the sentence in which an error occurs need be rewritten.

12. Encourage pupils to take a pride in their work, to note improvement as the composition book becomes filled and to keep the right hand page as nearly blank as possible.

# OUTLINE IN LANGUAGE AND COMPOSITION.

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## FIRST YEAR.

Make all composition oral during the first year, taking material from reading lessons, stories, points of compass, observation of familiar things, spontaneous drawing, the acting of stories, etc.

During the second term teachers may, if they wish, train children to write on the blackboard their name, age and residence, using these in simple sentences. The Cyr Dramatic Reader and Reynard, the Fox, offer good material for acting

## SECOND YEAR.

Make the work largely oral. Let most of the written work be at the blackboard. At first single sentences, then several sentences pertaining to the same subject. Be sure that the child has a thought and the language is used to express that thought, not for the purpose of merely "making sentences."

Teach the use of capitals, period and question mark and such common abbreviations as Mr., Mrs., and Dr. Begin to observe in reading lessons quotation marks and comma, but do not yet teach the use of these.

## THIRD YEAR.

Continue oral composition. Develop or stimulate thought on a subject, then write several sentences. Gradually lead children to rearrange sentences to make good paragraph. Call attention to structure of paragraph in reading, central thought, subordinate thoughts arranged about it. During second term write two or three paragraphs. Call attention in the reading to construction and arrangement of sentences to make them fit together in the paragraph. Make the ear the test of good composition. If the ear is incorrect educate it by oral drill and reading of correct form. Mere rules are useless if the expression does not *sound* right to the child.

A large part of the work of this grade should be done at the blackboard. The work of the year will be based upon Part I of English Lessons, Book One. The text-book indicates the character of the work but does not give an adequate amount. It must be very largely supplemented. There should be a daily exercise in composition.

The book will not teach itself. Work cannot be assigned from it to be done by children at their seats. Each lesson must be carefully developed. Do not follow the book slavishly. Some lessons are not adapted to California, to city life, or to your locality. Take the suggestions for treatment of such lessons, but use material suited to *your* class. Substitute other dictations for those not suited to the class. Do not make the children commit definitions of sentence and of declarative, interrogative, and imperative sentences. Call them statement, question and command without defining.

The A Third Grade will use suggestions and suitable material as far as lesson 14, page 37, State English Lessons, Book One. The B Third Grade will use suggestions and suitable material as far as Part II, page 84.

#### FOURTH YEAR.

In this year children should begin to put their thoughts in more definite form. To this end teacher and class should do much work together. Each member of the class contributes something to the thought and expression and passes judgment upon the final form. One composition is produced upon the blackboard. This is the combined effort of teacher and class. In this way the teacher draws out the best that is in each pupil and trains the judgment regarding both thought and expression. Much work of this kind should be done during the Fourth Year and continued for a portion of the time in the Fifth and Sixth.

The steps are as follows:

- (1) Oral composition. Teacher and class talk over the subject. The teacher gives the class much additional information on the subject. It is better to tell younger children than to say, "Find out"; they bring in a vast amount of misinformation.

- (2) Decide whether it is to be a composition or letter, etc. It should always be written as if to interest or instruct someone.

- (3) Decide upon the important topics or parts of the composition, rejecting those not important. Get the best wording

for these topics, writing them on the board in the order of their acceptance.

(4) Consider the topics in the order of sequence, deciding which will make the best introduction, which should come second or third, and which will make the best conclusion. Rewrite on the blackboard in the order in which the topics are to be used. Each topic is to be expanded into a paragraph. Everything pertaining to that topic should be in this paragraph. Point out some well-constructed paragraphs in the reading lesson.

(5) Teacher and class are now ready to construct the first paragraph. Call for sentences on this topic. After the class have put each sentence in good form, the teacher writes it on the blackboard. When an inappropriate sentence is suggested point out the topic under which it would properly come.

(6) When a sufficient number of sentences are secured for the paragraph, teacher and children read aloud to determine in what order the sentences should come and how the wording should be changed so that they will follow each other smoothly in the paragraph. Refer to good models in the reading lessons.

(7) When the paragraph has been thus revised children may copy it on paper as an exercise in spelling, punctuation, capitals and penmanship.

(8) Treat other paragraphs in similar manner.

This will appear to be very slow work; often but a single paragraph will be accomplished in a lesson. But it will be very instructive work, as the teacher guides the children into correct habits of both thought and expression. It appears at first glance to lack spontaneity and originality, but it is indeed very rich in both of these, for each child is called upon at every point to exercise his judgment on both thought and language. His judgment improves rapidly since at every point of the lesson it is aided by the teacher's.

Gradually introduce into this exercise a larger and larger amount of independent work. Thus after several exercises in arranging paragraph topics, when a new set have been put upon the board, ask half the class to step to the board and arrange them in best order for a composition, while those at their seats watch the work to offer improvements. When two or three paragraphs of a composition have been thus written let the class at blackboard and seats write the next paragraph independently and subject this work to class criticism, or let part of

the class only, write at the blackboard and those at the seats suggest betterment. As the work progresses through the year there should be an increasing amount of independent paragraph writing.

If there is danger that the pupils grow weary of a composition subject before its completion, it may be outlined, part of the paragraphs written and the subject dropped, or the teacher read to the class her own completion of the work. This completion by the teacher gives them a good model of composition. Do not keep them on one composition subject till they weary of it. Composition, well-taught, is the most interesting subject of the day.

A large part of the work of this grade should be done at the blackboard. The work of the year will be based upon Part II of English Lessons, Book One. The text-book indicates the character of the work but does not give an adequate amount. It must be very largely supplemented. There should be a daily exercise in composition.

The book will not teach itself. Work cannot be assigned from it to be done by children at their seats. Each lesson must be carefully developed. Do not follow the book slavishly. Some lessons are not adapted to California, to city life, or to your locality. Take the suggestions for treatment of such lessons, but use material suited to *your* class. Substitute other dictations for those not suited to the class.

The A Fourth Grade will use suggestions and suitable material as far as lesson 51, page 116. The B Fourth Grade will use suggestions and suitable material, completing Part II. Omit all technical grammar but lay great stress upon the correct *use* of language.

## FIFTH YEAR.

Continue work of composite composition. (See Fourth Year.) Let children write one or more paragraphs of each composition independent of teacher, then read for criticism. Put emphasis on the good things. Gradually increase the number of paragraphs written independently. More and more independent outlining. Composite composition should be but part of the work. Children should do much writing, aiming only at free and spontaneous expression of their own thoughts and feelings. Sometimes such thought and feeling must be stimulated by discussion, bringing out individual opinions and differ-

ent points of view. Material is thus developed for a more formal lesson on arrangement of topics, paragraphing, etc. Compositions which happen to be well arranged in this spontaneous writing should be read and favorably commented upon. See "Introduction to Language and Composition."

The work of this year will be based upon Part III, Language Lessons, Book One. *Omit all technical grammar.* (Part V of each lesson). Drill on the correct use of the irregular verbs.

| PRESENT.                                                                                                    | PAST.                                                   | PAST PARTICIPLE.                                                                                             |
|-------------------------------------------------------------------------------------------------------------|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|
| Used alone or with <i>one</i> of these helpers: do, did, may, can, must, will, shall, could, would, should. | Means past time, and is used <i>with-</i> out a helper. | When any <i>one</i> of these helpers is present: am, are, be, being, been, have, having, has, is, was, were. |
| see                                                                                                         | saw                                                     | seen                                                                                                         |
| go                                                                                                          | went                                                    | gone                                                                                                         |
| come                                                                                                        | came                                                    | come                                                                                                         |
| write                                                                                                       | wrote                                                   | written                                                                                                      |
| break                                                                                                       | broke                                                   | broken                                                                                                       |
| do                                                                                                          | did                                                     | done                                                                                                         |
| drive                                                                                                       | drove                                                   | driven                                                                                                       |
| sit                                                                                                         | sat                                                     | sat                                                                                                          |
| set                                                                                                         | set                                                     | set                                                                                                          |
| lay                                                                                                         | laid                                                    | laid                                                                                                         |
| lie                                                                                                         | lay                                                     | lain                                                                                                         |

Keep these forms before the children on blackboard or in composition books and refer to them constantly in correcting oral and written language. Teach them to correct their own errors by referring to these forms. Have forms written in the proper column indicating the reason for the same, thus:

|                        |                  |                               |
|------------------------|------------------|-------------------------------|
| He <i>can</i> write.   | He wrote (past)  | He <i>had</i> written.        |
| She <i>will</i> speak. | I spoke (past)   | He could <i>have</i> written. |
| They speak (present.)  | He went (past)   | ten.                          |
| We <i>shall</i> go.    | John came (past) | I <i>had</i> spoken.          |
|                        |                  | It <i>was</i> spoken.         |
|                        |                  | They must <i>have</i> spoken. |
|                        |                  | Having gone.                  |
|                        |                  | They must <i>have</i> gone.   |

A Fifth take to lesson 91. B Fifth complete the book.

Composition must not be confined to the lessons outlined in the book. A large amount of other material must be used.

### SIXTH YEAR.

Teach no technical grammar. Devote the time to written and oral composition. Give constant drill on the correct *use* of pronouns, possessives, plurals, and irregular verbs. Teach the helpers used with the three forms of the verb, as indicated under Fifth Grade work. There should be a daily exercise in composition throughout this year. (See Introduction to Composition.)

### SIXTH TO EIGHTH GRADES.

Sixth, Seventh and Eighth Grades will take their composition subjects in part from the history and geography and the reading connected with these subjects. In addition to this, attention is to be given to paragraph writing and to outlining. The work suggested for Fourth and Fifth Grades may be used profitably for any children who have not had sufficient drill of this character. It is doubtful if any of our classes have had enough of this drill.

The oral correction of composition in class has been found very helpful, as each pupil gets the benefit of the corrections and the teacher is saved much laborious work. The teacher, however, must look over some composition for the sake of spelling, capitals, grammar, penmanship, and correct form. Before a set of compositions is corrected by the teacher there should be oral correction in the class, pointing out in several papers characteristic mistakes. Composition should then be rewritten by pupils and put in the composition book or folder, using left page only. The teacher then looks over the composition, indicating by marginal signs the sentences in which mistakes occur. thus, S for spelling, C for capitals, G for grammar, P for punctuation, ¶ for paragraph, W for choice of words, etc. Pupil then rewrites on right-hand page, correcting mistakes. As a premium on careful work, a cross at the top of left-hand page indicates that only the sentences in which mistakes occur need be copied on right-hand page. Appeal to pupil's pride to keep the right-hand pages as nearly blank as possible. Have them note improvement in their own work. See "Introduction to Language and Composition."

## INTRODUCTION TO GRAMMAR.

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Parts I. and II. of the new State Grammar contain all of this subject needed by the child who is not going into the High School. Part III. is a tool subject for language study in the High School. Part I. should be taught in the Seventh Grade, Part II. in the Eighth Grade and Part III. in the first term in the High School. The time thus saved in the Grammar School should be devoted to reading, composition and literature. Good usage in language should be inculcated by constant practice.

Grammar treats of the thought relations of the sentence. In Latin, Greek, and other inflected languages these relations are expressed by endings; in English they are expressed very largely by position. Teach the relations which are found in the *English* sentence and the mode of their expression there; do not teach the verbiage of a foreign grammar which has no meaning when applied to the English sentence. Teach English Grammar; let the child learn Latin Grammar when he studies Latin. A thorough grasp of the thought relations will help the child to better reading, better thinking, better oral and written expression. As fast as these relations are learned they should be applied to the better interpretation of the printed page and to clearer expression of the child's thoughts. The mere memorizing of definitions and going through the form of parsing are a tedious waste of time, but a study of thought relations and their application in each lesson learned will save time in every subject. Grammar is thus an instrument of investigation in discovering the author's meaning. It is the square and level by which to true up his own work in composition.

In the simple sentence the child should know subject, verb and object, adjective and adverb, and be able to express these relations by his voice when, by inversion, they are out of their usual order. When in the complex sentence, word elements are replaced by phrases and clauses the child should be able to distinguish the principal and subordinate parts, discover the relation of modifiers, and the *office of connectives*. If the sentence is thus understood his voice should express these relations as he reads,—vocal diagraming. If the child's voice does not throw the sentence into proper perspective his knowl-

edge of grammar has no value though he may be able to repeat every word of the text.

Most of the useless verbiage of the older grammars is omitted in our new book. *Teachers are requested not to introduce it from other texts.*

As a rule it will be found best to teach each new subject from simple sentences placed upon the blackboard before assigning the lesson from the book. In many cases the difficulties of a subject need more careful grading than the book gives. This must be done from the blackboard and oral work. Each subject needs more application than the text gives. Do not spoil a lesson in literature by turning it into a lesson in grammatical analysis, but use the child's knowledge of grammar to discover the author's meaning.

Language should have five lessons per week, half the time being given to grammar and half to composition.

# OUTLINE IN GRAMMAR

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## A SEVENTH GRADE.

Continue drill on irregular verbs.

English Lessons, Book II., to Lesson 13.

Before beginning the text test the ability of the class to distinguish the sentence from incomplete phrase or clause. The boys play ball, Playing ball in the park, The girls went to school, The girls while going to school, When we went home, When we went home it was dark. Continue such drill until children feel completeness of statement, and complete sentences flow from tongue and pen. Repeat such drill whenever composition work shows need of it.

In teaching subject and predicate, (Lesson 3) use your own sentences, grading difficulties. Begin with verbs of action, the verb expressed in one word.

The boys play ball in the park.

The boys played ball in the park.

Change to verbs expressed by two words.

The boys are playing, etc.

The boys were playing, etc.

The boys had played, etc.

The boys will play, etc.

Next use the verbs in the passive voice.

The boy broke the window.

The window was broken by the boys.

The boys have broken the window.

The windows have been broken by the boys.

Now teach the forms of the verb be.

The lessons are difficult.

The boys were on their way home.

Christmas will soon be here.

Introduce the transposed sentence, giving it first in the usual order (not "natural").

The boys were playing ball in the park.

In the park the boys were playing ball.

The lone pine stood high on the mountain.  
High on the mountain stood the lone pine.  
The cabin stood under the tall trees.  
The cabin of the hunter stood under the tall trees.  
Under the tall trees stood the cabin of the hunter.  
In the tall grass crouched a tiger.  
Aloft on the mountain the sea fogs pitched their tents.  
Beneath the mountain are veins of gold.  
Silent stands the old mill.

In reading transposed parts are separated by a pause or pauses. Have sentences *read* correctly. *Apply same principle to reading lessons.* The value of grammar is not in its learning but in its application.

After Lesson 8 give many transposed sentences. Develop the idea of modifiers by expanding simple sentences thus:

The boys play ball. The large boys play football. The large boys of our school play football in the park. The large boys who attend our school play football in the park in pleasant weather. The large boys attending our school play football in the park when the weather is pleasant. When the weather is pleasant the large boys of our school play football in the park, etc.

Tell whether each new modifier adds to the subject or to the predicate. Give many blackboard exercises in expanding sentences.

After Lesson 9 give additional sentences to distinguish the uses of *there*.

Before Lesson 12 give many sentences simpler than those in the book. Examples from the Reader may be found simpler than the selections in Lesson 12.

Use composition, Part I. with the Course of Study.

## B SEVENTH GRADE.

English Lessons, Book II.

Begin with Lesson 13 and complete Part I.

In teaching nouns grade difficulties very carefully, putting your own sentences on the blackboard. Give *several* lessons to nouns.

1. Names of persons and places.

*Henry*, take your seat.

*Mary*, bring me the book.

*James*, close the door.

*Oakland* is a city of *California*.

2. Names of common objects, as in the above sentences.

3. Names of sounds, tastes, smells; as, Music, noise, whistle, laughter, fragrance, odor; of feelings, as ache, pain, sorrow, joy. (Put the nouns in sentences.)

4. Qualities; as health, beauty, grace, truth, wealth, etc., in sentences. (Use complete sentences.)

5. Abstractions; as time, space, whiteness, kindness, etc. Do not allow children to confuse abstract nouns with words which tell kind (adjectives).

Omit the distinction between concrete and abstract nouns.

Teach personal pronouns thoroughly before taking up relatives. Give several lessons to personal pronouns, using many sentences of your own.

In teaching verbs (Lesson 18) grade difficulties very carefully, as in teaching predicate in A Seventh work.

Before teaching Lesson 20 review and extend exercises in expanding sentences,—A Seventh work.

In teaching adjectives grade the difficulties.

1. Adjectives before its noun.

The red rose is on the table.

2. Predicate adjective.

The rose on the table is red.

3. Transposed adjectives.

The rose, red and fragrant, is covered with dew.

Teach the use of the pause in reading.

Give many sentences of each kind. Distinguish adjectives which tell *kind* from nouns which *name* qualities.

In Lesson 24 begin by changing adverbs to phrases.

He came early. He came in good season.

He came hastily. He came in great haste.

She spoke softly. She spoke in low tones.

The Indian crept noiselessly. The Indian crept without noise.

Show that the phrase takes the place of the single word and that it takes the entire phrase to make the modifier.

Before teaching prepositions (Lesson 25) introduce the subject with many simple sentences illustrated by action if necessary.

Put the book on the desk.

Put the book under the desk.

Drop the eraser into the basket.

Take the eraser from the basket.

Stand near the stove.

Stand under the clock.

Walk across the room.

Walk up the aisle.

Walk down the aisle.

Give the book to me.

Look toward the window.

Look at the clock.

Show that each preposition must have an object.

After Lesson 26 give many sentences with conjunctions joining words and phrases. Emphasize the fact that these conjunctions must connect the same elements in the same use. Avoid clauses which the class have not yet studied.

Teach the clause in simple form from the blackboard.

Columbus discovered the shape of the earth.

Columbus discovered that the earth is round.

He knew the truth.

He knew that the story was true.

His loss dawned upon him.

The nature of the stars is now well known.

That the stars are suns is now well known.

Idle boys rarely have good lessons.

Boys that are idle rarely have lessons that are good.

Give much easy *phrase* and *clause* analysis.

Use the lessons of Composition, Part I., in connection with other subjects of the Course of Study.

## A EIGHTH GRADE.

Review phrases and clauses. *Give much work in phrase and clause analysis during this year.*

Complements is a very difficult subject. Before taking Lessons 30 and 31 give about three days to sentences on the blackboard.

1. Noun as object of the verb.

Roosevelt shot the bear.  
The boy studies grammar.  
The woodsman felled the tree.  
The hunter stalked the deer.  
The man climbed the ladder.  
They pitched their tents by the river.  
They cross the river in a boat, etc.

Show that Roosevelt and bear, boy and grammar, woodman and tree, hunter and deer, man and ladder, they and tents, they and river are different things and can be represented by different pictures.

2. Noun as attribute.

Roosevelt is President.  
The boy is a good student.  
Washington became commander.  
The tree is an oak.  
Our capital is Sacramento, etc.

Show that Roosevelt and President, boy and student, Washington and Commander, tree and oak, capital and Sacramento, are the same thing and the picture of the one is the picture of the other.

3. Adjective as attribute.

The mountain is rugged.  
The tiger was fierce.  
The rose is fragrant.  
The grapes became sweet.  
The weather seemed pleasant.  
The park is beautiful.  
The sea grew stormy.

Show that only one object is represented in each sentence and that rugged, fierce, fragrant, sweet, pleasant, beautiful, stormy, show attributes or qualities belonging to the subjects.

The class will now be able to study complements from the book. Give an exercise in transposed complements.

Bright and clear during the day.  
Green grow the rushes by the brook.

Silent are the voices now.  
 Full many a gem of purest ray serene.  
 The deep unfathomed caves of ocean bear.  
 Brave and strong were the soldiers as they marched  
 to battle.  
 Swift and strong rushes the tide through the Golden  
 Gate.  
 A chill no coat could quite shut out the coming of  
 the snow storm told.

Select others from the literature and have them read correctly.

The copulative verb (Lesson 32) may be introduced by changing from the single to the progressive form.

The girl studies history. The girl is studying history.  
 The boys played ball. The boys were playing ball.

Is and were assert only while studying and playing express the action. Studies and played both express the action.

The boy is sick. The lion was lame. Lincoln became President. The rose smells fragrant.

The verb is, was, became, smells assert only and are called copulatives. Copulatives take the attributes rather than the adverbial modifier.

The rose smells sweet, not sweetly.  
 The apple tastes sour.  
 The velvet feels smooth and soft.  
 She looks pretty.  
 I feel bad.

Begin factitive complements with such sentences as:—

They captured him. They made him captive.  
 He smoothed the board. He made the board smooth.  
 They enslaved the blacks. They made the blacks slaves.  
 Sunset reddened the clouds. Sunset made the clouds red.  
 The rain wet the streets. The rain made the streets wet.  
 They imprisoned the rebel. They took him prisoner.

Introduce indirect objects with many sentences of this kind:—

They made a coat for the boy. They made the boy  
a coat.  
He loaned a book to the girl. He loaned the girl a  
book.  
He gave a dollar to the porter. He gave the porter  
a dollar.  
Do a favor for me? Do me a favor?  
She told a story to the children. She told them a  
story.  
Give much drill on complements and objects.

## INFINITIVES AND PARTICIPLES.

## I.

He went home from school.  
He reads good books.  
They played ball.  
The snow fell on the lake.  
The smoke rose from the tree  
tops.  
We take exercise.  
Bears catch fish.

## II.

To go home from school.  
Having read good books.  
To have played ball.  
The snow falling on the lake.  
The smoke rising to the clouds.  
Having returned from our  
walk.  
Boys to catch fish, etc.

Which groups are sentences? Which say? Which only mean without saying? Which assert? Which imply? Verbs assert, participles and infinitives imply. Infinitives are preceded by *to*, participles generally end in *ed* or *ing*.

Omit the first part of Lesson 37, beginning with the definition of infinitive, page 60.

## USES OF THE INFINITIVE.

As subject,—To *study* is to improve.  
As attribute,—To be idle is *to fail*.  
As object,—He liked *to play*.  
To modify verb,—Lucy went to *visit* her cousin.  
To modify adjective,—Anxious *to succeed* he worked hard.  
To modify noun,—The attempt *to escape* failed.  
In an infinitive clause,—She wanted him *to go*.

Lesson 38 contains too many difficulties,—participles, verbal nouns, verbal adjectives, and factitive complements. Separate these, teaching each thoroughly by itself, with many sentences from the blackboard. This should be done before

assigning Lesson 38. Omit note at bottom of page 63. Participles and infinitives take the same modifiers as the verb,—adverb, object, attribute, adverbial phrase or clause. When the same word is used as a verbal noun it takes the adjective, the adverbial phrase and clause as modifiers.

*Shooting* ducks out of season is punished by fine. (Participle.)

The *shooting* of ducks, etc. (Verbal noun.)

*Walking* rapidly warms the blood. (Participle.)

Rapid *walking* warms the blood. (Noun.)

*Giving* alms indiscriminately is injurious. (Participle.)

The indiscriminate *giving* of alms is injurious. (Noun.)

Discriminate carefully between the participle and the verbal adjective.

*Singing* birds are silent at this season. (Adjective, tells the kind of birds.)

The birds, *singing* under our window, awakened us in the early morning. (Participle, implying the act of the birds.)

The *trotting* horse stood hitched to the post. (Adjective.)

The farmer's horse, *trotting* down the road, was frightened by the auto. (Participle.)

Use other sentences like these to make the distinction clear.

Take to Lesson 41, Page 68.

Take Composition, Part III. to Page 325, using these lessons in connection with other work in the Course of Study.

## B EIGHTH GRADE.

Review participles and infinitives.

In Lesson 41 note carefully the author's definition of phrase and clause and use the words consistently in all subsequent lessons.

### PHRASE AND CLAUSE ANALYSIS.

After completing Lesson 46 give for the remainder of the term a *very large amount of time to phrase and clause analysis, and to connectives*. These express the important thought relations of the sentence. The child can get no meaning from a difficult sentence until he knows the relations of phrases and

clauses and sees how they are connected. Lack of such drill has been a stumbling block in his study of geography, history and literature. Good reading gives an unconscious knowledge of these relations. The expansion of the sentence, phrase and clause analysis, in the Seventh Grade, have given a clearer grasp of them. Pupils of the Eighth Grade are capable of a still clearer analysis and expression of these important relations which will greatly strengthen their mastery of the English sentence. Take many lessons from the literature. When the relations are understood, *make the voice express them*. Give special attention to the reading of inverted phrases and clauses.

Conjunctions are very important in understanding the meaning of a sentence as in the following:—

“West and south there were fields of flax and orchards and cornfields

Spreading afar and unfenced o’er the plain; and away to the northward.

Blomidon rose, and the forest old, and aloft on the mountains  
Sea-fogs pitched their tents, and mists from the mighty Atlantic

Looked on the happy valley, but ne’er from their station descended.”

In sentences like the following phrase and clause relations are indispensable to good reading or correct understanding of the sentence:—

“The moon above the eastern wood  
Shone at its full; the hill-range stood  
Transfigured in the silver flood,  
Its blown snows flashing cold and keen,  
Dead white, save where some sharp ravine  
Took shadow, or the sombre green  
Of hemlocks turned to pitchy black  
Against the whiteness at their back.”

“In the bosom of one of those spacious coves which indent the eastern shore of the Hudson, at that broad expansion of the river denominated by the ancient Dutch navigators the Tappan Zee, and where they always prudently shortened sail, and implored the protection of St. Nicholas when they crossed, there lies a small market town or rural port, which by some is called Greensburgh, but which is more generally and properly known by the name of Tarry Town.”

“A chill no coat, however stout,  
Of homespun stuff could quite shut out,  
A hard, dull bitterness of cold,  
That checked, midvein, the circling race  
Of life blood in the sharpened face,  
The coming of the snow-storm told.”

A few questions will bring out the meaning of the sentence:  
Told what? What told? What clause describes chill? What words describe coat? What word is in apposition with chill? What clause modifies bitterness of cold? How do you read the sentence to make coming of the snow-storm the object of verb told?

In Lesson 49 note the author's definition of compound and complex sentences and use the terms consistently.

Complete Part II. of the Grammar to Page 94.

Complete Part III. of the Composition, using these lessons in connection with other work in the Course of Study.

## INTRODUCTION TO SPELLING.

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**PURPOSE.**—The aim of instruction in spelling is to get the children to give a correct written spelling of the words which they use in their compositions. They are not expected to be able to spell *all* the words they read or hear. Our reading vocabulary and the vocabulary of words we hear and can understand is much larger than our writing vocabulary. The teacher's time should be focused on the words most used and in the way they are used.

Oral spelling is only a means of instruction, not an end. We do practically no oral spelling in life. The spelling of words in lists in a spelling blank, without any association of context is likewise only a means of teaching. Practically all our spelling in life is done in sentences. The final goal in the spelling-period, as in life, is to obtain good silent and written spelling of words in real sentences.

**ELEMENTS TO BE ASSOCIATED.**—A good speller will have a thorough association of *three elements* in every word he spells. He will know its *Meaning*, its *Pronunciation*, and its *Order of Letters*. Let him think of any one of these and the other two will be recalled instantly and habitually.

The work in spelling in our schools has been woefully weak because the work has centered on the isolated memorization of one element, i. e. upon the *Mere Order* of letters. We need more good precise pronunciation and less slovenly enunciation and *articulation*. We want the words to stand for real, vital and interesting experiences and meanings out of the child's life, in spelling as in any other subject. When all three elements are associated our spelling will improve.

Teaching spelling is not merely hearing a recitation, or dictating a list of words to be written. That is testing, not teaching. The true teaching comes in at the assignment of the lesson, and in correcting spelling errors.

**ASSIGNING THE LESSON.**—Get the meaning of the words before the class. This can be done by objects, by definition, by context. Oral discussion of a subject, where the words are used, is a good way of doing this. A picture or an imagined

situation, well within the child's experience, may form a splendid basis for such conversation work.

When the *meaning* of the word is clear, mostly through its usage by the teacher and children, then the spelling form of the word may be *Presented*. The teacher should *write* the word on the board, and have the children visualize it. Rapid glance work will help here, so as to insure attention. Then the *teacher* should *pronounce* the word so that the children can observe the order of sounds. Then let the *children pronounce* the word after the teacher, being sure the word is correctly spoken. Then the children should *copy* the word. With all these associations, mental, oral, visual and motor, properly set, the child is ready to *drill* on it *alone* in his *study period*.

CORRECTING SPELLING MISTAKES.—If a child makes a mistake in spelling, whether in the composition, spelling or any other period, the teacher's duty, with young children, goes beyond merely marking the incorrect word. With the youngest children the correct spelling should be given in the place of the wrong. The older children, who have a good command of the dictionary should be constantly encouraged to look up the correction for themselves, and then to drill on it by themselves but young children *must* be given the correct form and then repetition must be guaranteed by the teacher so the new impression will be fixed.

ORAL AND WRITTEN SPELLING.—Oral spelling is most important for young children, but it should be used less and less by older children, written spelling taking its place in greater degree. Little children, just beginning to write, translate their sounds into writing, so that sound is almost the only basis for spelling they have. Hence irregular words should be avoided with the youngest children. When irregular words are gradually introduced throughout the upper grades, it is better to put the emphasis on written spelling, practically slighting the sound order, as it is a very slight key to the order of written letters. The pronouncing of the word before and after writing is a good habit, however.

SYLLABLES AND PHONOGRAMS.—In reading today we use the phonogram (*ate* in *m-ate*) instead of the syllable, which had in its turn superseded the reading by "spelling out of letters." Something of the same process is going on in Modern Spelling as in Modern Reading. Use similarity of phonogram-sound and spelling wherever you can. To learn vine as v-ine is to have an instant key to "dine," "fine," "kine," "line," "mine,"

etc. The phonogram method is better than the syllabication method. Note, the syllable method is "tri-fle," the phonogram method is "tr-ifle." Use all your knowledge of good reading method, for good spelling is merely reversing the application of reading principles. In reading you go from the written form to the sound and meaning; in spelling from the meaning and sound to the written form.

AVOID.—Do not allow all sorts of formal drills to interfere with practical spelling as applied in real composition. Too much formal defining is useless. Usage and the dictionary are better ways of getting meanings. Avoid work in homonyms, and antonyms. Use formal work in synonyms with judgment. Word analysis and word building is guess work with elementary school children, who need to be taught to go directly to the dictionary for *precise* meanings, rather than have a short way of avoiding that duty which cannot be over-emphasized in these years.

THE DICTIONARY.—In arithmetic when we are in doubt we go to nature to find out its laws. In spelling we should go to human usage to find out the rules of good practice. But the dictionary compiles this good usage for us. Hence *all children should be taught to use the dictionary* as one means of getting the meanings of words in connection with their spelling.

TEXT-BOOKS.—The new *California State Series Spellers*, Book I and II, are to be used by the pupils. Book I is to be used in the second, third, fourth and fifth years; Book II in the sixth, seventh and eighth years.

## OUTLINE IN SPELLING.

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### A SECOND GRADE.

*Cal. State Series Speller*, Book I, Sec. 1, pp. 8-27.

Teach the alphabet.

### B SECOND GRADE.

*Cal. State Series Speller*, Book I, Sec. II, pp. 28-44.

### A THIRD GRADE.

*Cal. State Series Speller*, Book I, Sec. III, pp. 45-65.

### B THIRD GRADE.

*Cal. State Series Speller*, Book I, Sec. IV, pp. 66-87.

### A FOURTH GRADE.

*Cal. State Series Speller*, Book I, Sec. V, pp. 88-111.

### B FOURTH GRADE.

*Cal. State Series Speller*, Book I, Sec. VI, pp. 112-134.

Review the alphabet.

### FIFTH GRADES.

*Cal. State Series Speller*, Book I, Sec. VII, pp. 135-185.  
Teach the letters and their names in their alphabetical order. Apply this knowledge to the use of the dictionary, first to find the meaning of words, later to find their pronunciations. Do not memorize any diacritic marks save those for the long and short sounds. Use "the method of analogy," by having the child consult the key at the bottom of the dictionary page. *Webster's Common School Dictionary* in the hands of the child.

## SIXTH GRADES.

*Cal. State Series Speller*, Book II, Sec. I, 61 pp. Drill on rapid use of dictionary. *Webster's Common School Dictionary* in hands of pupil. Drill use of alphabet in connection with residence and telephone directories.

## SEVENTH GRADES.

*Cal. State Series Speller*, Book II, Sec. II, 58 pp. Further development of use of dictionary, the child now making use of *Webster's Academic Dictionary*.

## EIGHTH GRADES.

*Cal. State Series Speller*, Book II, Sec. III, 54 pp. Drill on use of *Webster's Academic Dictionary*. Give some training in ready use of the *Unabridged* and other large library dictionaries. Also in the use of the encyclopedia.



## INTRODUCTION TO PENMANSHIP.

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PURPOSES.—In penmanship the object should be to gain (1) thorough legibility, (2) a fair amount of speed, and (3) some individuality. This is all that is required of the ordinary person. If a particular business situation demands perfect and permanent legibility, the special use of the typewriter supplants handwriting. If great speed is required shorthand is utilized. There can be a great waste of time trying to get certain results through penmanship which are, in modern life, better secured by other means.

USE OF COPY BOOK.—The copy book is used mainly for form. It gives the model of legibility. The children will copy this slowly and laboriously, at first. To counteract the effect of this copy work, parallel exercises in free movement work should be given. Use practice paper for most of the work.

At first insist on constant improvement in the form of the letters until there is a perfect knowledge of how each letter should be made. During this stage there will be a sameness in the writing of the class. Once the letters are mastered singly and in combination little marks of individuality will appear. So long as these do not lessen legibility they should not be interfered with. Hence, later copy-book work should not be allowed to stamp out individuality, which in the modern business system is quite important in the identification of signatures, etc. on business and other papers.

## OUTLINE IN PENMANSHIP.

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Observe the following schedule, and, until further notice, use Curtiss's Semi-Vertical Copy Books, I-VI.

 A FIRST GRADE—Give movement exercises with crayon and pencil, preparatory to writing.

B FIRST GRADE—Practice on paper with movement exercises.

A SECOND GRADE—Book I and movement exercises.

B SECOND GRADE—Book II, and movement exercises.

A & B THIRD GRADE—Book III, and movement exercises.

A & B FOURTH GRADE—Book IV, and movement exercises.

A & B FIFTH GRADE—Book V, and movement exercises.

A & B SIXTH GRADE—Book VI, and movement exercises.

## INTRODUCTION TO ARITHMETIC.

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**PURPOSE.**—The course of study has been planned with two distinct ends in mind. (1) To give the child a knowledge of common business and other situations where arithmetical combinations and manipulations are ordinarily used, so that he can understand them and reason from them with correctness. (2) To give the child accuracy and skill in memorizing the number combinations and manipulating them in series. The first will give the child power to say whether he will “add,” “subtract,” or “multiply,” etc. The second will lead him to “add,” “subtract,” or “multiply” *accurately*.

**OBJECTIVE WORK.**—Every new situation or process should be introduced concretely with much objective work. Objective work has its place just as much in the higher grades as in the lower. This is well illustrated in the introduction of fractions and mensuration. The quantity necessary in the higher grades is usually not so great. *Whenever a child is confused about the meaning of an arithmetical situation or the truth of a combination an appeal to actual objects will always help straighten it out.*

**RATIONALIZATION.**—There is very little use for giving the reasons for mere manipulation in arithmetic, particularly in the lower grades. “Carrying” in column addition, for example, should be made a matter of accurate memory or fixed habit. Much repetition will give the result. Do not make a child reason out by long and devious processes what he will be required to do in life rapidly, through memory.

**ACCURACY AND SPEED.**—The first and all important need in arithmetic is accuracy. Speed comes through accuracy, and after it. To try for speed before the children have absolutely mastered the memorizations of combinations is fatal to accuracy. It makes the children give some answer, usually a guessed one, and this tends to establish wrong connections. Teachers in the elementary school should make *accuracy* their main purpose, rather than speed.

**BLACKBOARD AND SEAT WORK.**—It is essential that children get no wrong impressions to begin with. Hence teachers in the earliest stages of teaching any given fact should have a

large control over the work. The following typical stages are suggested: (1) Blackboard work under absolute control of teacher, who does the work, while children merely look on. (2) Children do the work at the blackboard in plain sight of teacher who supervises closely so as to catch errors quickly. (3) Children work at seats with teacher supervising as best she can. Work should be thoroughly developed, understood and memorized before this drill stage is reached. (4) Children doing drill work at home where teacher has no oversight save from results returned the next day.

NUMBER LANGUAGE.—School work in arithmetic does not always deal with real situations. It more frequently does not. It usually substitutes a *description* for the *situation*. When a child works with an arithmetic problem he is working with a description of the situation. Hence it is very important that the teacher develop a clear knowledge of such arithmetical terms as are used in arithmetical descriptions. The words "add," "subtract" or the signs  $+$  or  $-$  must stand for something definite in number just as the words longitude and latitude and the signs N, S, E and W do in geography. Children will not understand the situation they are dealing with unless they understand the language which describes it.

All problems are to be presented to the child *orally* up to the Fifth Grade. Of course the child may use paper and pencil in performing the operation. Written language is much more difficult for the child to understand, and should be given for the first time in the Fifth Grade, and, at first, in very simple language. Avoid problems the elements of which are buried in the previous problems of the same series. It makes the situation too difficult to understand. You can get many problems from a single situation if it is *really* before you, but a series of long descriptions are a severe task for the imagination of the child.

THE PRESENTATION OF ARITHMETIC PROBLEMS.—Arithmetic problems or examples may be presented to the child in three ways: (1) The situation may present a problem, or (2) the problem may be presented orally, or (3) the problem may be presented in written or printed form.

At the beginning of any new line of work, the problem should be presented by the first method, *i. e.* objectively. After the situation is understood oral presentation should be the main method. Not until the process or situation is well understood should there be a written presentation. No written present-

ation of problems is required before the fifth year, but the teacher may read problems to the child in any earlier grade.

**BUSINESS INSTITUTIONS.**—The higher up in the grades that arithmetic is taught the more important it becomes to understand the setting in which the arithmetical process is demanded. The main difficulty in the higher grades is in knowing the steps to be performed, rather than in performing the steps. The main emphasis in the upper grades is on Reasoning from the situation which must be clearly understood. The main emphasis in the lower grades is on memorizing the combinations. Both lines of work are always parallel, however.

There will be days therefore in upper grade arithmetic where the institutions of banking, insurance, etc., are studied without reference to any use of numbers or number processes, just as the institutions of government or commerce or transportation are treated in geography. Such work gives the child a better understanding of the situation in which he is to do his "figuring." It is as important in business life to know *what* to do, as to know *how* to do it.

**MENTAL AND WRITTEN ARITHMETIC.**—Strictly speaking *all arithmetic is mental*. But the mental processes may assume different forms. The work may be done (a) silently, (b) orally, (c) in written form on paper or blackboard, or (d) by a mixture of any two or all three of these ways. The last or mixed method is the usual way in life. *All four of these ways of "doing" arithmetic should be used in the school throughout all the grades from the beginning.*

\* Silent or "mental" arithmetic and mixed or partly expressed arithmetic are the two most important ways at which to aim. When numbers are small, work the examples without words, pencil or crayon. Use pencil or crayon for large numbers. The beginning of every new step should be made with small numbers, and here a large amount of work without pencil or crayon may be done. Gradually larger numbers and longer processes may be done silently, but the work in silent arithmetic should be confined to small numbers and short processes.

Oral arithmetic and written arithmetic, where the processes and work are completely expressed, are valuable mainly so as to let the teacher see just how the child has performed the operation. One of these methods is always essential in the attempt to discover why and where a child has failed to get the right answer or solution. They are good methods for teaching but uneconomical for ordinary life situations.

USE OF THE TEXT-BOOK.—The *New State Series Elementary Arithmetic* is now introduced into the course of study. It is to be in the *hands of the teacher only* during the first three years. During the Fourth and Fifth years the book should be in the hands of the pupil.

The order and method of teaching should be that of the course of study; the main use of the text is for drill and review material. This applies particularly to the first five grades, where the method is laid out in detail in the course. Where a method is stated in the course of study for the grammar grades, it takes precedence over that in the Grammar School Text. Otherwise follow the text.

In the primary grades, avoid the extensive treatment of ratio and proportion suggested in the text. Keep the use of measures exceedingly simple. Do not let the children memorize rules as such. Show the truth of the manipulation by paralleling the manipulation with actual objective work wherever possible, so that the children see that the process is *true*. Then make the manipulation *habitual* by repeating the process itself (not the words describing the process).

As there is no text in the hands of the pupils of the first three grades much typical drill material has been printed in the course of study for the convenience of the teacher. This material covers the typical combinations and difficulties and should be used for constant drill in lieu of text-book material.

# OUTLINE IN ARITHMETIC.

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## A FIRST GRADE.

### NUMBER WORK—CONCRETE AND ORAL.

All work in this grade is to be oral (not written) and objective or concrete (not abstract or formal).

All Arithmetic in this grade is to be subordinated to the more important needs of the language arts—oral language, reading, etc.

TEXT-BOOK.—Teachers should have in their own hands the *New State Series Elementary Arithmetic*. The concrete work for developing number concepts and language in Chapter I, pp. 7-33, will prove useful, and should be followed wherever it does not exceed the requirements laid down in the course of study. Place the emphasis on counting, first, later on measuring, which is only a more difficult form of counting.

### THE LANGUAGE OF NUMBER STORIES.

The number work of this grade is really language work where the teacher makes it her special business to teach children to comprehend the ordinary oral language used to describe any simple situation in life where the idea of number is involved.

The child should be taught (1) to *understand* the language which describes, and (2) to *use* the language which describes a real situation where number is involved.

The number stories (problems or situations) to be taught are of three kinds: counting, adding, subtracting. These three ideas, in the order given, are to be identified by the children through many varying descriptions of the same, or similar situations. In adding and subtracting, the highest number involved should not be larger than the children can grasp with a single glance of the eye or can easily imagine; that is, not above 5.

As far as possible, make the exercise in number stories in a single class exercise deal with one set of topics, such as "a grocery store," "a bakery shop," etc. This will make the stories real to the child and prevent the disconnected work which seat-

ters the child's attention over a hundred or more things during one lesson.

### FORMAL WORK INVOLVED.

**COUNTING.**—Teach the children to count orally to 30. Most of the work should be the counting of real things. Take sticks, toothpicks, etc. Group them into tens with rubber bands, so as to convey true idea of meaning of ten as one ten, twenty as two tens, etc. No writing of numbers.

**ADDITION.**—In the addition stories the following combinations are to be used, being learned orally and incidentally, because the child can see, or imagine, the numbers involved:

$$\begin{array}{cccccccccccc}
 2 & 1 & 3 & 2 & 2 & 2 & 1 & 4 & 1 & 1 \\
 +2 & +3 & +2 & +1 & +3 & +1 & +1 & +1 & +1 & +4 \\
 \hline
 4 & 4 & 5 & 3 & 5 & 3 & 2 & 5 & 2 & 5
 \end{array}$$

There is no special order in which to use these combinations. No written work in addition combinations.

**SUBTRACTION.**—In the subtraction stories, use the same combinations as are given in addition. Use in a similar way.

### B FIRST GRADE.

#### NUMBER WORK—FORMAL, WRITTEN AND APPLIED.

Written number work begins with this grade. Formal number work is now presented as such for the first time, the teacher having the child fix in the memory a certain number of fundamental combinations.

(1) All the combinations for this grade should be presented objectively to show that the result is really true. (2) Then the combination should be fixed in the memory so it will not be forgotten. (3) And finally, it should be applied in simple, oral problems so the combination can be used for solving a real situation.

**TEXT-BOOK.**—The *New State Series Elementary Arithmetic* should be in the hands of the teacher. Chapter I, pp. 7-33, will be most useful for this grade. The counting and group work will give an objective basis for the formal work of this grade. Do not confuse the child with distinctions between

division by measurement and division by partition. Treat measurement as a form of counting. Omit measures not given in this course of study.

### FORMAL WORK.

READING AND WRITING OF NUMBERS.—The children can count orally to 30. Teach them to write to 30.

Count orally by 10's to 100. Use bundles of ten sticks or toothpicks bound together to represent counting by 10's. Bind 10 bundles of 10 to represent 100. Write by 10's to 100. Use these bundles of 10's and 100's constantly to show how the number scale is built up. Use with both oral and written work.

Show with written work that 10 follows 9; 20, 19; 30, 29; and use the written counting by 10's to advance the serial counting to 100. Much drill in oral and written counting to 99. Do not attempt to teach the place values of tens and units.

ADDITION.—Present objectively the following combinations, preferably in the order given:

$$\begin{array}{cccccccccccccccc}
 2 & 2 & 3 & 2 & 4 & 3 & 2 & 5 & 3 & 4 & 3 & 5 & 4 & 4 & 5 \\
 +2 & +3 & +2 & +4 & +2 & +3 & +5 & +2 & +4 & +3 & +5 & +3 & +4 & +5 & +4 \\
 \hline
 4 & 5 & 5 & 6 & 6 & 6 & 7 & 7 & 7 & 7 & 8 & 8 & 8 & 9 & 9
 \end{array}$$

Use the oral language form, "3 and 2 are 5," for  $\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$

Then present the following, without objects in problem or story form, as the children will get them readily from the mere counting sequence:

$$\begin{array}{cccccccccccccccc}
 1 & 1 & 2 & 1 & 3 & 1 & 4 & 1 & 5 & 1 & 6 & 1 & 7 & 1 & 8 \\
 +1 & +2 & +1 & +3 & +1 & +4 & +1 & +5 & +1 & +6 & +1 & +7 & +1 & +8 & +1 \\
 \hline
 2 & 3 & 3 & 4 & 4 & 5 & 5 & 6 & 6 & 7 & 7 & 8 & 8 & 9 & 9
 \end{array}$$

To save time, teach  $\begin{array}{r} 3 \\ +2 \\ \hline 5 \end{array}$  from  $\begin{array}{r} 2 \\ +3 \\ \hline 5 \end{array}$ ,  $\begin{array}{r} 2 \\ +1 \\ \hline 3 \end{array}$  from  $\begin{array}{r} 1 \\ +2 \\ \hline 3 \end{array}$ , and so on.



SUBTRACTION.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations given under addition, but in the following form:

$$\begin{array}{cccccccccccccccc} 4 & 5 & 5 & 6 & 6 & 6 & 7 & 7 & 7 & 7 & 8 & 8 & 8 & 9 & 9 \\ -2 & -3 & -2 & -4 & -2 & -3 & -5 & -2 & -4 & -3 & -5 & -3 & -4 & -5 & -4 \\ \hline 2 & 2 & 3 & 2 & 4 & 3 & 2 & 5 & 3 & 4 & 3 & 5 & 4 & 4 & 5 \end{array}$$

$$\begin{array}{cccccccccccccccc} 2 & 3 & 3 & 4 & 4 & 5 & 5 & 6 & 6 & 7 & 7 & 8 & 8 & 9 & 9 \\ -1 & -2 & -1 & -3 & -1 & -4 & -1 & -5 & -1 & -6 & -1 & -7 & -1 & -8 & -1 \\ \hline 1 & 1 & 2 & 1 & 3 & 1 & 4 & 1 & 5 & 1 & 6 & 1 & 7 & 1 & 8 \end{array}$$

Use the oral language form, “3 and 2 are 5,” for—

|   |   |   |   |   |
|---|---|---|---|---|
| 3 | + | 2 | = | 5 |
| — |   | — |   | — |
| 2 |   |   |   |   |

Apply combinations to higher decades, as in

|    |    |    |
|----|----|----|
| 5  | 15 | 25 |
| —3 | —3 | —3 |
| —  | —  | —  |
| 2  | 12 | 22 |

in *oral exercises only*.

As fast as all the combinations of a single number are learned,

use them in two-figure column subtraction, as  $-32$ . Be sure to

$\overline{23}$

have the child invariably attack the right-hand column first.

### DRILL LIST—SUBTRACTION.

47 68 97 69 55 86 87 76 89 76 95 58 68 77  
-25-43-44-45-32-53-42-54-34-44-53-25-34-25

MEASURES.—Present the following measures through objective work, using rulers, yard stick, actual money, measures and weights, showing equality where a table or part of a table is given:

|         |                           |             |
|---------|---------------------------|-------------|
| Length— | 12 inches                 | = 1 foot.   |
|         | 3 feet                    | = 1 yard.   |
| Value—  | 5 cents                   | = 1 nickel. |
|         | 10 cents                  | = 1 dime.   |
|         | 10 dimes                  | = 1 dollar. |
|         | (Teach use of c. and \$). |             |
| Liquid— | 2 pints                   | = 1 quart.  |
| Weight— | 1 pound.                  |             |

Use measures in connection with real situations in order that the child may know for what kind of things the measures are used, particularly in buying. Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

### PROBLEMS.

All formal work in any form should be given in problem or story form as soon as it is mastered. As far as possible make the exercise in number stories in a single day's work deal with one set of topics, such as "a fruit store," "the schoolroom." This will make the stories real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. Give such oral problems as those on p. 53, *State Elementary Arithmetic*. The largest numbers should not be larger than 9. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, once the reasoning with simple figures is mastered.

Teach the terms, "add," and "subtract," for the two types of reasoning used in this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem or story, state what they are going to do—"add" or "subtract."



$$\begin{array}{r}
 1 \quad 2 \quad 9 \quad 3 \quad 8 \quad 4 \quad 7 \quad 5 \quad 6 \\
 +10 \quad +9 \quad +2 \quad +8 \quad +3 \quad +7 \quad +4 \quad +6 \quad +5 \\
 \hline
 11 \quad 11 \quad 11 \quad 11 \quad 11 \quad 11 \quad 11 \quad 11 \quad 11
 \end{array}$$

$$\begin{array}{r}
 2 \quad 3 \quad 9 \quad 4 \quad 8 \quad 5 \quad 7 \quad 6 \\
 +10 \quad +9 \quad +3 \quad +8 \quad +4 \quad +7 \quad +5 \quad +6 \\
 \hline
 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12
 \end{array}$$

$$\begin{array}{r}
 3 \quad 4 \quad 9 \quad 5 \quad 8 \quad 6 \quad 7 \\
 +10 \quad +9 \quad +4 \quad +8 \quad +5 \quad +7 \quad +6 \\
 \hline
 13 \quad 13 \quad 13 \quad 13 \quad 13 \quad 13 \quad 13
 \end{array}$$

Use the oral language form, "9 and 1 are 10," for  $\begin{array}{r} 1 \\ +9 \\ \hline 10 \end{array}$

To save time, from  $\begin{array}{r} 1 \\ 9 \\ \hline 10 \end{array}$  teach  $\begin{array}{r} 9 \\ 1, \text{ etc.} \\ \hline 10 \end{array}$

When a combination is learned, apply it to a higher decade, as:

$$\begin{array}{r}
 2 \quad 2 \quad 2 \\
 8, \quad 18, \quad 28 \\
 \hline
 10 \quad 20 \quad 30
 \end{array}$$

As fast as all the combinations of a number are learned, use them in column addition:

$$\begin{array}{r}
 3 \\
 5 \\
 2 \\
 \hline
 10
 \end{array}$$

Apply to higher decades, as:

$$\begin{array}{r}
 3 \quad 3 \quad 3 \\
 5 \quad 5 \quad 5 \\
 2, \quad 12, \quad 22, \text{ etc.} \\
 \hline
 10 \quad 20 \quad 30
 \end{array}$$

Give two and three-figure column addition, at first with 10 or 11, sum coming on extreme left, thus:

$$\begin{array}{r} 53 \\ 34 \\ 22, \\ \hline 109 \end{array} \quad \begin{array}{r} 532 \\ 342 \\ 325 \\ \hline 1199 \end{array}$$

Be sure to have the children attack the right-hand column first, invariably:

After the combinations of 12 are known, teach "carrying" in column addition, as in 25 If an oral form is used, say "Put 12 down the 2 and add the 1." It 43 is preferable not to use any vis- 32 ual aids from the beginning.

$$\begin{array}{r} 112 \end{array}$$

DRILL LIST—COLUMN ADDITION—Add both ways.

$$\begin{array}{r} 5 \ 2 \ 2 \ 3 \ 2 \ 2 \ 2 \ 6 \ 2 \ 2 \ 2 \ 3 \ 2 \ 4 \ 3 \ 3 \ 2 \ 2 \ 4 \ 2 \ 2 \ 5 \ 3 \ 2 \ 3 \ 2 \ 2 \\ 4 \ 2 \ 2 \ 2 \ 8 \ 6 \ 3 \ 2 \ 7 \ 6 \ 3 \ 4 \ 4 \ 4 \ 5 \ 2 \ 8 \ 5 \ 2 \ 4 \ 2 \ 2 \ 3 \ 7 \ 2 \ 3 \ 9 \\ 4 \ 7 \ 6 \ 7 \ 3 \ 3 \ 5 \ 5 \ 4 \ 4 \ 5 \ 6 \ 7 \ 4 \ 5 \ 8 \ 2 \ 4 \ 4 \ 6 \ 9 \ 5 \ 4 \ 2 \ 6 \ 7 \ 2 \\ \hline \end{array}$$

$$\begin{array}{r} 2 \ 3 \ 3 \ 3 \ 4 \ 2 \ 2 \ 4 \ 2 \ 2 \ 2 \ 2 \ 5 \ 3 \ 3 \ 3 \ 3 \ 3 \ 3 \ 4 \ 4 \ 2 \ 4 \ 2 \ 2 \ 3 \ 4 \ 3 \\ 3 \ 3 \ 4 \ 3 \ 2 \ 2 \ 6 \ 2 \ 6 \ 3 \ 5 \ 7 \ 3 \ 6 \ 2 \ 4 \ 7 \ 3 \ 4 \ 4 \ 3 \ 5 \ 2 \ 4 \ 4 \ 5 \ 3 \ 6 \\ 8 \ 4 \ 3 \ 7 \ 6 \ 8 \ 5 \ 7 \ 2 \ 6 \ 6 \ 3 \ 5 \ 3 \ 5 \ 3 \ 3 \ 6 \ 5 \ 5 \ 6 \ 5 \ 5 \ 4 \ 5 \ 4 \ 5 \ 4 \\ \hline \end{array}$$

$$\begin{array}{r} 3 \ 2 \ 3 \ 2 \ 4 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \ 2 \ 4 \ 2 \ 2 \ 3 \\ 4 \ 3 \ 2 \ 3 \ 2 \ 3 \ 4 \ 2 \ 3 \ 2 \ 4 \ 7 \ 2 \ 5 \ 3 \ 3 \\ 3 \ 2 \ 3 \ 4 \ 2 \ 4 \ 3 \ 5 \ 3 \ 2 \ 2 \ 2 \ 2 \ 2 \ 6 \ 3 \\ 3 \ 3 \ 3 \ 3 \ 5 \ 4 \ 2 \ 3 \ 5 \ 6 \ 2 \ 2 \ 4 \ 2 \ 2 \ 3 \\ \hline \end{array}$$

SUBTRACTION.—Teach subtraction by the method of addition, as used by business men in making change. Use the combinations given under addition, but in the following visual form:

$$\begin{array}{r} 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 10 \ 11 \ 11 \ 11 \ 11 \ 11 \\ -9 \ -1 \ -8 \ -2 \ -7 \ -3 \ -6 \ -4 \ -5 \ -10 \ -9 \ -2 \ -8 \ -3 \\ \hline 1 \ 9 \ 2 \ 8 \ 3 \ 7 \ 4 \ 6 \ 5 \ 1 \ 2 \ 9 \ 3 \ 8 \end{array}$$

$$\begin{array}{r}
 11 \quad 11 \quad 11 \quad 11 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 12 \quad 13 \quad 13 \\
 -7 \quad -4 \quad -6 \quad -5 \quad -10 \quad -9 \quad -3 \quad -8 \quad -4 \quad 7 \quad -5 \quad -6 \quad -10 \quad -9 \\
 \hline
 4 \quad 7 \quad 5 \quad 6 \quad 2 \quad 3 \quad 9 \quad 4 \quad 8 \quad 5 \quad 7 \quad 6 \quad 3 \quad 4
 \end{array}$$

$$\begin{array}{r}
 13 \quad 13 \quad 13 \quad 13 \quad 13 \\
 -4 \quad -8 \quad -5 \quad -7 \quad -6 \\
 \hline
 9 \quad 5 \quad 8 \quad 6 \quad 7
 \end{array}$$

Use the oral form, "9 and 1 are 10," for

$$\begin{array}{r}
 10 \\
 -9 \\
 \hline
 1
 \end{array}$$

Apply combinations to higher decades, as in

$$\begin{array}{r}
 10 \quad 20 \quad 30 \\
 -8, \quad -8, \quad -8, \text{ etc.} \\
 \hline
 2 \quad 12 \quad 22
 \end{array}$$

but in *Oral Exercises Only*.

As fast as all the combinations of a single number are learned use them in column subtraction where no "carrying" is involved, thus:

$$\begin{array}{r}
 989 \quad 108 \\
 -453, \quad -94, \text{ etc.} \\
 \hline
 536 \quad 14
 \end{array}$$

Teach the child to inspect the numbers before attempting to subtract, making sure that the number from which a number is to be subtracted is really larger, as in  $389$ . The answer to  $-421$

$345$  should be recognized by inspection as zero.

$$\begin{array}{r}
 345 \\
 -345 \\
 \hline
 0
 \end{array}$$

Teach the handling of zero the in column subtraction, as in

$$\begin{array}{r}
 \text{(a)} \quad 867 \\
 -467 \\
 \hline
 400
 \end{array}
 \quad
 \begin{array}{r}
 \text{(b)} \quad 867 \\
 -400 \\
 \hline
 467
 \end{array}$$

## DRILL LIST—SUBTRACTION.

|     |     |     |      |     |     |     |     |     |     |     |
|-----|-----|-----|------|-----|-----|-----|-----|-----|-----|-----|
| 139 | 126 | 103 | 561  | 127 | 115 | 103 | 138 | 117 | 109 | 107 |
| —74 | —72 | —71 | —561 | —40 | —82 | —53 | —47 | —94 | —84 | —43 |

|     |      |     |     |     |     |     |     |     |     |
|-----|------|-----|-----|-----|-----|-----|-----|-----|-----|
| 136 | 127  | 107 | 114 | 119 | 137 | 128 | 126 | 125 | 137 |
| —95 | —105 | —12 | —52 | —63 | —65 | —54 | —34 | —94 | —87 |

|     |     |     |     |     |     |     |     |     |     |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 127 | 136 | 125 | 115 | 118 | 103 | 114 | 108 | 116 | 107 |
| —64 | —52 | —33 | —72 | —47 | —61 | —34 | —36 | —23 | —24 |

MEASURES.—Teach the child to tell time. As preliminary to telling time, teach the Roman numerals to XII, and counting by 5's to 60. Teach children to say "5 minutes to 6," "5 minutes past 6," etc. Teach these measures:

Time— 60 minutes = 1 hour.  
           24 hours = 1 day.  
 Count— 12 things = 1 dozen.

Review measures of length (in., ft., yd.), value (ct., nickel, dime, dollar), liquid (pt., qt.).

Use measures in connection with real situations in order that children may know for what kind of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

## PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to children orally. Children will be given no problems in written (or printed) language form, though they may perform any necessary operations on blackboard or paper to assist them in solving a problem.

No problem is to involve more than one-step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers, should follow after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and subtraction, teach the terms "add" and "subtract" as the names for the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the child after hearing the problem or story, state what he is going to do—"add" or "subtract."

## B SECOND GRADE.

TEXT-BOOK.—*New State Series Elementary Arithmetic* in hands of the teacher. Use such material in Chap. III, pp. 43-114, as will fit the course of study.

### FORMAL WORK.

READING AND WRITING OF NUMBERS.—Reading and writing of numbers through three figures has been learned. Teach thousands by the group method. First, teach pointing off the numbers. Then, read the number in the thousand group as though it stood alone, giving the name "thousand" to the comma, proceeding with the next group as though it stood alone.

#### DRILL LIST OF TYPES—READING AND WRITING OF NUMBERS.

|         |         |         |         |
|---------|---------|---------|---------|
| 4,000   | 4,854   | 4,400   | 4,570   |
| 80,000  | 80,854  | 80,400  | 80,570  |
| 79,000  | 79,854  | 79,400  | 79,570  |
| 854,000 | 854,854 | 854,400 | 854,570 |
| 600,000 | 600,854 | 600,400 | 600,570 |
| 570,000 | 570,854 | 570,854 | 570,570 |
| 607,000 | 607,854 | 607,854 | 607,570 |
| 4,607   | 4,079   | 4,004   | 4,080   |
| 80,607  | 80,079  | 80,004  | 80,080  |
| 79,607  | 79,079  | 79,004  | 79,080  |
| 854,607 | 854,079 | 854,004 | 854,080 |
| 600,607 | 600,079 | 600,004 | 600,004 |
| 570,607 | 570,079 | 570,004 | 570,004 |
| 607,607 | 607,079 | 607,004 | 607,004 |

Change any figure in the above numbers, leaving the zeros in spaces where they are, and new dictations of the same difficulty will be obtained.

GROUP COUNTING.—Use oral group counting as a method of addition. When the combinations through 14 are learned, count by

|     |             |      |              |
|-----|-------------|------|--------------|
| 4's | 2-6-10-etc. | 5's  | 4-9-14-etc.  |
| 4's | 4-8-12-etc. | 10's | 4-14-24-etc. |

When the combinations through 15 are learned, count by

|      |              |     |              |
|------|--------------|-----|--------------|
| 5's  | 5-10-15-etc. | 6's | 1-7-13-etc.  |
| 10's | 5-15-25-etc. | 6's | 3-9-15-etc.  |
|      |              | 6's | 5-11-17-etc. |

When the combinations through 16 are learned, count by

|     |              |      |              |
|-----|--------------|------|--------------|
| 6's | 2-8-14-etc.  | 10's | 6-16-26-etc. |
| 6's | 4-10-16-etc. |      |              |
| 6's | 6-12-18-etc. |      |              |

When the combinations through 17 are learned, count by

|     |             |     |              |      |              |
|-----|-------------|-----|--------------|------|--------------|
| 7's | All series. | 8's | 1-9-17-etc.  | 10's | 7-17-27-etc. |
|     |             | 8's | 3-11-19-etc. |      |              |
|     |             | 8's | 5-13-21-etc. |      |              |
|     |             | 8's | 7-15-23-etc. |      |              |

When the combinations through 18 are learned, count by

|     |              |      |              |
|-----|--------------|------|--------------|
| 8's | 2-10-18-etc. | 10's | 8-18-28-etc. |
| 8's | 4-12-20-etc. |      |              |
| 8's | 6-14-22-etc. |      |              |
| 8's | 8-16-24-etc. |      |              |

When the combinations through 19 are learned, count by

|     |             |      |              |
|-----|-------------|------|--------------|
| 9's | All series. | 10's | 9-19-29-etc. |
|-----|-------------|------|--------------|

ADDITION.—Present the combinations as far as the sum of 19. Objective presentation will be unnecessary. Simply give the combinations and have the children memorize them. The

written form is  $\begin{array}{r} 4 \\ +10 \\ \hline \end{array}$  and the oral form is "ten and four are 14."



3 2 2 2 3 2 3 3 5 4 3 2 2 2 2 3 9 4 3 4 3 6 2 7 3 4 3  
 4 3 3 2 2 3 5 7 3 5 4 2 7 2 7 4 3 6 5 2 3 9 2 3 3 4 3  
 5 5 4 5 5 3 6 6 8 4 3 7 4 6 5 3 4 4 6 2 4 2 8 3 5 3 8  
 8 7 5 5 5 9 2 2 2 4 7 6 3 5 2 4 2 4 3 9 8 2 3 2 4 4 2  
 — — — — — — — — — — — — — — — — — — — — — — — — — —

6 4 7 2 7 6 9  
 3 4 7 9 3 2 3  
 4 4 2 5 3 7 2  
 3 4 2 2 5 2 2  
 — — — — — — —

SUBTRACTION.—Teach subtraction by the method of addition as used by business men in making change. Use the combinations as given under addition, but in the following visual forms:

|     |    |    |    |    |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|----|----|----|----|
| 14  | 14 | 14 | 14 | 14 | 14 | 15 | 15 | 15 | 15 | 15 |
| —10 | —9 | —5 | —8 | —6 | —7 | 10 | —9 | —6 | —8 | —7 |
| —   | —  | —  | —  | —  | —  | —  | —  | —  | —  | —  |
| 4   | 5  | 9  | 6  | 8  | 7  | 5  | 6  | 9  | 7  | 8  |

|     |    |    |    |     |    |    |     |    |     |
|-----|----|----|----|-----|----|----|-----|----|-----|
| 16  | 16 | 16 | 16 | 17  | 17 | 17 | 18  | 18 | 19  |
| —10 | —9 | —7 | —8 | —10 | —9 | —8 | —10 | —9 | —10 |
| —   | —  | —  | —  | —   | —  | —  | —   | —  | —   |
| 6   | 7  | 9  | 8  | 7   | 8  | 9  | 8   | 9  | 9   |

14  
 In —9 use the oral form “9 and 5 are 14.”  
 —  
 5

Apply combinations to higher decades, as in 14 24 34  
 but in *Oral Exercises Only*. —9,—9,—9, etc.  
 — — —  
 5 15 25

Extend column subtraction, with combinations below ten,  
 to four, five and six places:

9786  
 —3652, etc.  
 ———  
 6134

As fast as all the combinations of a single number are learned, use them in column subtraction of four, five and six figures, thus:

$$\begin{array}{r} 1498 \\ -964 \\ \hline 534 \end{array} \quad \begin{array}{r} 14986 \\ -9632 \\ \hline 5354 \end{array} \quad \begin{array}{r} 149869 \\ -94526 \\ \hline 55343 \end{array}$$

When the process of subtraction by addition is thoroughly mechanical with the children, teach "carrying" in subtraction.

The process of "carrying" should be taught as a purely mechanical process. First, teach the process where each possible step involves carrying, thus:

$$\begin{array}{r} 734 \\ -385 \\ \hline 349 \end{array} \quad \begin{array}{r} 8431 \\ -5675 \\ \hline 2756 \end{array}, \text{ etc.}$$

$$\begin{array}{r} 8485 \\ -3946 \\ \hline 4539 \end{array}$$

Later alternate "carrying" and "not carrying," thus:

$$\begin{array}{r} \text{In } 734 \text{ say "5 and 9 are 14" (putting down the 9), "9 and} \\ -385 \quad 4 \text{ are 13" (putting down the 4), "4 and 3 are 7" (putting down the 3).} \\ \hline 349 \end{array}$$

You may call the attention of the child to the fact that whenever the upper number consists of two figures, the next lower number is raised one. The teacher might actually make the change in the visual form the first few times she teaches the oral form in connection with blackboard work. Experience makes it seem inadvisable to allow the children to cross out their written work, as they do quicker and better work if they are taught to imagine the change from the start.

#### DRILL LIST—SUBTRACTION.

$$\begin{array}{r} 897,654 \\ -92,873 \\ \hline \end{array} \quad \begin{array}{r} 134,278 \\ -17,179 \\ \hline \end{array} \quad \begin{array}{r} 578,632 \\ -389,831 \\ \hline \end{array} \quad \begin{array}{r} 543,298 \\ -172,695 \\ \hline \end{array}$$
  

$$\begin{array}{r} 464,755 \\ 367,958 \\ \hline \end{array} \quad \begin{array}{r} 465,434 \\ -99,936 \\ \hline \end{array} \quad \begin{array}{r} 140,745 \\ -90,249 \\ \hline \end{array} \quad \begin{array}{r} 827,549 \\ -793,864 \\ \hline \end{array}$$

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

|         |                |             |
|---------|----------------|-------------|
| Weight— | 16 ounces      | = 1 pound.  |
| Liquid— | 2 pints        | = 1 quart.  |
|         | 4 quarts       | = 1 gallon. |
| Square— | 1 square inch. |             |
|         | 1 square foot. |             |
| Time—   | 60 seconds     | = 1 minute. |
|         | 60 minutes     | = 1 hour.   |
|         | 24 hours       | = 1 day.    |
|         | 7 days         | = 1 week.   |

Review measures of length (inches, feet, yards), and value (cents, nickels, dimes, dollars).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

## PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one-step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulation of numbers, should follow, after the reasoning with simple figures is mastered.

As the work of this grade is confined to addition and sub-

traction, teach the terms "add" and "subtract" as the names for the two types of reasoning used. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add" or "subtract."

In *New State Series Elementary Arithmetic* use Oral Problems for drill in Addition and Subtraction, in Chap. III, pp. 43-114.

### A THIRD GRADE.

#### FORMAL WORK.

TEXT-BOOK.—*New State Series Elementary Arithmetic* in the hands of the teacher. The text should be used for drill material, and not for method. The material in Chap. III, pp. 43-114, would review addition and subtraction. Material in Chap. IV could be used for multiplication and division in this grade. No dividend or product larger than 36 should be used. Follow closely the method of the course of study for division.

READING AND WRITING OF NUMBERS.—Frequent reviews of reading and writing of numbers of six figures in connection with the dictation of numbers for addition, subtraction, multiplication and division, and the reading of the answers of same.

ADDITION AND SUBTRACTION.—Give regular and frequent drills on accurate and rapid column addition and column subtraction.

MULTIPLICATION.—Present the multiplication combinations objectively, or by derivation from column addition, supplemented by objective work.

|   |   |   |    |    |    |    |    |
|---|---|---|----|----|----|----|----|
|   |   |   |    |    |    |    | 2  |
|   |   |   |    |    |    | 2  | 2  |
|   |   |   |    |    | 2  | 2  | 2  |
|   |   |   |    | 2  | 2  | 2  | 2  |
|   |   | 2 | 2  | 2  | 2  | 2  | 2  |
|   | 2 | 2 | 2  | 2  | 2  | 2  | 2  |
| 2 | 2 | 2 | 2  | 2  | 2  | 2  | 2  |
| 2 | 2 | 2 | 2  | 2  | 2  | 2  | 2  |
| — | — | — | —  | —  | —  | —  | —  |
| 4 | 6 | 8 | 10 | 12 | 14 | 16 | 18 |

When you teach  $\overset{2}{\times 3}$ , at once show that  $\overset{3}{\times 2}$ , and so with

all the combinations having reverses.

Teach the following combinations in this grade; preferably in the order given:

|            |            |            |            |            |            |            |            |            |            |            |            |            |            |            |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| 2          | 2          | 3          | 2          | 4          | 2          | 5          | 2          | 6          | 2          | 7          | 2          | 8          | 2          | 9          |
| $\times 2$ | $\times 3$ | $\times 2$ | $\times 4$ | $\times 2$ | $\times 5$ | $\times 2$ | $\times 6$ | $\times 2$ | $\times 7$ | $\times 2$ | $\times 8$ | $\times 2$ | $\times 9$ | $\times 2$ |
| <u>4</u>   | <u>6</u>   | <u>6</u>   | <u>8</u>   | <u>8</u>   | <u>10</u>  | <u>10</u>  | <u>12</u>  | <u>12</u>  | <u>14</u>  | <u>14</u>  | <u>16</u>  | <u>16</u>  | <u>18</u>  | <u>18</u>  |
| 3          | 3          | 4          | 3          | 5          | 3          | 6          | 3          | 7          | 3          | 8          | 3          | 9          | 3          | 9          |
| $\times 3$ | $\times 4$ | $\times 3$ | $\times 5$ | $\times 3$ | $\times 6$ | $\times 3$ | $\times 7$ | $\times 3$ | $\times 8$ | $\times 3$ | $\times 9$ | $\times 3$ | $\times 9$ | $\times 3$ |
| <u>9</u>   | <u>12</u>  | <u>12</u>  | <u>15</u>  | <u>15</u>  | <u>18</u>  | <u>18</u>  | <u>21</u>  | <u>21</u>  | <u>24</u>  | <u>24</u>  | <u>27</u>  | <u>27</u>  | <u>27</u>  | <u>27</u>  |
| 4          | 4          | 5          | 4          | 6          | 4          | 7          | 4          | 8          | 4          | 9          | 4          | 9          | 4          | 9          |
| $\times 4$ | $\times 5$ | $\times 4$ | $\times 6$ | $\times 4$ | $\times 7$ | $\times 4$ | $\times 8$ | $\times 4$ | $\times 9$ | $\times 4$ | $\times 9$ | $\times 4$ | $\times 9$ | $\times 4$ |
| <u>16</u>  | <u>20</u>  | <u>20</u>  | <u>24</u>  | <u>24</u>  | <u>28</u>  | <u>28</u>  | <u>32</u>  | <u>32</u>  | <u>36</u>  | <u>36</u>  | <u>36</u>  | <u>36</u>  | <u>36</u>  | <u>36</u>  |

Use the oral form "3 2's are 6" for  $\overset{2}{\times 3}$

As soon as each table of combinations is learned, drill in column multiplication up to four numbers in the multiplicand. Omit all zeros and, at first, all ones.

(a) No "carrying" in the multiplication:—  $\begin{array}{r} 342 \\ \times 2 \\ \hline 684 \end{array}$

(b) With "carrying":—  $\begin{array}{r} 9578 \\ \times 2 \\ \hline 19156 \end{array}$

(c) With two figures in the multiplier:—  $\begin{array}{r} 232 \\ \times 32 \\ \hline 464 \\ 696 \\ \hline 7424 \end{array}$

Call attention to the fact that the first number of a partial product *put down* is always put down *under* the figure used to multiply.

Teach the 1 combinations in column addition form. Precede it with an oral exercise where rhythm is used to fix the idea, saying: "One 1 is 1," "One 2 is 2," etc. Then apply in columns, thus:

$$\begin{array}{r} 2567 \\ \times 21 \\ \hline 5134 \\ 2567 \\ \hline 53907 \end{array}$$

Later, say, "2 ones are 2," "3 ones are 3," etc., and apply in columns, thus:

$$\begin{array}{r} 1214 \\ \times 43 \\ \hline 3642 \\ 4856 \\ \hline 52202 \end{array}$$

**DIVISION.**—Present the following combinations given under multiplication, but in the following form:

$$\begin{array}{cccccccccccccccc} \overline{2} & \overline{3} & \overline{2} & \overline{4} & \overline{2} & \overline{5} & \overline{2} & \overline{6} & \overline{2} & \overline{7} & \overline{2} & \overline{8} & \overline{2} & \overline{9} & \overline{2} \\ 2)4 & 2)6 & 3)6 & 2)8 & 4)8 & 2)10 & 5)10 & 2)12 & 6)12 & 2)14 & 7)14 & 2)16 & 8)16 & 2)18 & 9)18 \\ \overline{3} & \overline{4} & \overline{3} & \overline{5} & \overline{3} & \overline{6} & \overline{3} & \overline{7} & \overline{3} & \overline{8} & \overline{3} & \overline{9} & \overline{3} \\ 3)9 & 3)12 & 4)12 & 3)15 & 5)15 & 3)18 & 6)18 & 3)21 & 7)21 & 3)24 & 8)24 & 3)27 & 9)27 \\ \overline{4} & \overline{5} & \overline{4} & \overline{6} & \overline{4} & \overline{7} & \overline{4} & \overline{8} & \overline{4} & \overline{9} & \overline{4} \\ 4)16 & 4)20 & 5)20 & 4)24 & 6)24 & 4)28 & 7)28 & 4)32 & 8)32 & 4)36 & 9)36 \end{array}$$

3

Use the oral form "3 2's are 6" for 2)6

When a combination is mastered in the division form drill on it in the uneven division form:

$$\begin{array}{r} 2 \\ \hline 2)5 \\ 4 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ \hline 3)10 \\ 9 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 3 \\ \hline 3)11 \\ 9 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 4)17 \\ 16 \\ \hline 1 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 4)18 \\ 16 \\ \hline 2 \end{array}$$

$$\begin{array}{r} 4 \\ \hline 4)19 \\ 16 \\ \hline 3 \end{array}$$

Extend the dividend to four places:

$$\begin{array}{r} \text{(a)} \\ 48 \\ \hline 2)97 \\ 8 \\ \hline 17 \\ 16 \\ \hline 1 \end{array}$$

$$\begin{array}{r} \text{(b)} \\ 155 \\ \hline 3)467 \\ 3 \\ \hline 16 \\ 15 \\ \hline 17 \\ 15 \\ \hline 2 \end{array}$$

$$\begin{array}{r} \text{(c)} \\ 1274 \\ \hline 4)5099 \\ 4 \\ \hline 10 \\ 8 \\ \hline 29 \\ 28 \\ \hline 19 \\ 16 \\ \hline 3 \end{array}$$

Drill on the following types of zero difficulties to be certain the child can handle them:

$$\begin{array}{r} \text{(a)} \\ 235 \\ \hline 3)706 \\ 6 \\ \hline 10 \\ 9 \\ \hline 16 \\ 15 \\ \hline 1 \end{array}$$

$$\begin{array}{r} \text{(b)} \\ 247 \\ \hline 3)741 \\ 6 \\ \hline 14 \\ 12 \\ \hline 21 \\ 21 \\ \hline \end{array}$$

$$\begin{array}{r} \text{(c)} \\ 515 \\ \hline 3)1547 \\ 15 \\ \hline 4 \\ 3 \\ \hline 17 \\ 15 \\ \hline 2 \end{array}$$

MEASURES.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Square—9 square feet = 1 square yard.

Cubic— 1 cubic inch.

1 cubic foot.

A penny = 1 cent.

Value— A quarter = 25 cents.

A half = 50 cents.

A dollar = 100 cents.

Teach children to count by 5's and 10's to 100 so as to add their money orally. Count the big coins first. Show that you add and subtract dollars and cents like other numbers, writing dollars under dollars and cents under cents, thus:

$$\begin{array}{r} \$4.75 \\ 2.15, \\ \hline \$6.90 \end{array} \quad \begin{array}{r} \$3.65 \\ 1.20, \text{ etc.} \\ \hline \$2.45 \end{array}$$

Review measures of length (in., ft., yd.), liquid (pt., qt., gal.), weight (oz., lb.), time (sec., min., hr., day, wk.) and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction.

No reduction of denominate numbers.

### PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the children and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step-reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning, with written manipulations of numbers, should follow after the reasoning with simple figures is mastered.

In addition to the terms "add" and "subtract" teach the terms "multiply," "divide" for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

For review, use oral problems found in *New State Series Elementary Arithmetic*, Chap. IV, pp. 115-187, selecting material carefully.

## B THIRD GRADE.

TEXT-BOOK.—*New State Series Elementary Arithmetic* in hands of the teacher. The text should be used for drill material and not for method; this is particularly the case in division. Use the material, Chap. III, pp. 43-114, to review addition and subtraction. Use that in Chap. IV, pp. 115-187, for multiplication and division.

## FORMAL WORK.

READING AND WRITING OF NUMBERS.—Review reading and writing of numbers of six figures.

Teach the reading and writing of millions, using the group method. First, teach pointing off from right to left, thus: 275,432,678. Teach the reading of the figures within the group as though they stood alone; then give the name of the comma, then proceed to the next group until the whole number is called. Thus 275,432,678 would be read 275 million, 432 thousand, 678. Avoid the use of "and" in the reading of whole numbers. Avoid the use of the "s" in naming the commas; saying "thousand" not "thousandths."

Before finishing the work of this grade thoroughly test the reading of numbers and the writing of numbers from dictation. Vary the kinds of numbers in "unit," "thousand" and "million"



When  $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$  is taught, teach  $\begin{array}{r} 6 \\ \times 5 \\ \hline 30 \end{array}$ , and so on with all combinations having reverses. Use the oral form "6 5's are 30" for  $\begin{array}{r} 5 \\ \times 6 \\ \hline 30 \end{array}$

As soon as each table of combinations is learned, apply in column multiplication as far as six figures in the multiplicand, omitting zeros at first.

$$\begin{array}{r} 135427 \\ \times 35 \\ \hline \end{array}$$

Give, orally, "1 ten is ten," "2 tens are 20," "3 tens are 30," etc. to "10 tens are 100."

Before completing the work of the term extend to eight places, *merely to show the child he can do it.*

Extend the multiplier to three places. Before leaving the work extend to five places, *merely to show the child he can do it.*

Teach the use of 0 in column multiplication, use preparatory rhythmic drill, saying "2 zeros are zero," "3 zeros are zero," etc., and apply in columns—

$$\begin{array}{r} 4030 \\ \times 23 \\ \hline 12090 \\ 8060 \\ \hline 92690 \end{array}$$

Later say "zero 2's are zero," "zero 3's are zero," etc., and apply in columns—

$$\begin{array}{r} 9678 \\ \times 50 \\ \hline 0000 \\ 48390 \\ \hline 483900 \end{array}$$

in multiplier, calling attention to the fact that the first number of a partial product *put down* is always put down *under* the number used to multiply—

$$\begin{array}{r} 9678 \\ \times 50 \\ \hline 483900 \end{array}$$

DIVISION.—Present the combinations given under multiplication, but in the following form:

$$\begin{array}{r} 5 \quad 6 \quad 5 \quad 7 \quad 5 \quad 8 \quad 5 \quad 9 \quad 5 \\ \hline 5)25 \quad 5)30 \quad 6)30 \quad 5)35 \quad 7)35 \quad 5)40 \quad 8)40 \quad 5)45 \quad 9)45 \end{array}$$

$$\begin{array}{r} 6 \quad 7 \quad 6 \quad 8 \quad 6 \quad 9 \quad 6 \\ \hline 6)36 \quad 6)42 \quad 7)42 \quad 6)48 \quad 8)48 \quad 6)54 \quad 9)54 \end{array}$$

$$\begin{array}{r} 7 \quad 8 \quad 7 \quad 9 \quad 7 \\ \hline 7)49 \quad 7)56 \quad 8)56 \quad 7)63 \quad 9)63 \end{array}$$

$$\begin{array}{r} 8 \quad 9 \quad 8 \\ \hline 8)64 \quad 8)72 \quad 9)72 \end{array}$$

$$\begin{array}{r} 9 \\ \hline 9)81 \end{array}$$

$$\begin{array}{r} 6 \\ \hline \end{array}$$

Use the oral form "six 5's are 30" for 5)30.

When a combination is mastered in its even division form, apply and drill it in its uneven division forms—

$$\begin{array}{r} 5^1 \quad 5^2 \quad 5^3 \quad 5^4 \\ \hline 5)26 \quad 5)27 \quad 5)28 \quad 5)29 \\ 25 \quad 25 \quad 25 \quad 25 \\ \hline 1 \quad 2 \quad 3 \quad 4 \end{array}$$

$$\begin{array}{r} 6^1 \quad 6^2 \quad 6^3 \quad 6^4 \quad 6^5 \\ \hline 6)37 \quad 6)38 \quad 6)39 \quad 6)40 \quad 6)41 \\ 36 \quad 36 \quad 36 \quad 36 \quad 36 \\ \hline 1 \quad 2 \quad 3 \quad 4 \quad 5 \end{array}$$

|       |       |       |       |       |         |
|-------|-------|-------|-------|-------|---------|
| $7^1$ | $7^2$ | $7^3$ | $7^4$ | $7^5$ | $7^6$   |
| <hr/> | <hr/> | <hr/> | <hr/> | <hr/> | <hr/>   |
| 7)50  | 7)51  | 7)52  | 7)53  | 7)54  | 7)55    |
| 49    | 49    | 49    | 49    | 49    | 49      |
| <hr/> | <hr/> | <hr/> | <hr/> | <hr/> | <hr/>   |
| 1     | 2     | 3     | 4     | 5     | 6, etc. |

Extend the dividend to five and six places. Before completing the work of the term extend to eight places, merely to show the child he can handle a large number.

Drill on the following types of zero difficulties to be certain the child can handle them:

|                      |                      |                      |
|----------------------|----------------------|----------------------|
| (a) $508\frac{2}{3}$ | (b) $502\frac{1}{3}$ | (c) $500\frac{1}{3}$ |
| <hr/>                | <hr/>                | <hr/>                |
| 3)1526               | 3)1507               | 3)1501               |
| 15                   | 15                   | 15                   |
| <hr/>                | <hr/>                | <hr/>                |
| 26                   | 7                    | 1                    |
| 24                   | 6                    |                      |
| <hr/>                | <hr/>                |                      |
| 2                    | 1                    |                      |

Before the close of this term teach short division as a short way of doing division by one figure, as in

$$\begin{array}{r} 9535\frac{5}{8} \\ \hline 8)76285 \end{array}$$

**FRACTIONS.**—All work with reading, writing and changing of fractions in this grade is to be given objectively. The denominators of fractions used are not to exceed one figure. Teach objectively the halves, thirds, fourths, fifths and sixths, so as to make them meaningful.

Teach children to understand mixed numbers, using as a whole number a single figure with the fractions suggested above, as  $1\frac{1}{2}$ ,  $2\frac{2}{3}$ , etc.

Teach children to understand improper fractions with the denominators above mentioned,  $\frac{3}{2}$ ,  $\frac{5}{3}$ , etc.

Show that  $\frac{3}{2}$  is equal to 1 whole,  $\frac{3}{3}$ ,  $\frac{4}{4}$ , etc.

Show that  $\frac{6}{8}$  is equal to  $\frac{3}{4}$ . Reduce simple fractions to lowest terms.

Then, with these same simple fractions, show through ob-

jective work how to change an improper fraction to a mixed number, a mixed number to an improper fraction, etc.

Use *New State Series Elementary Arithmetic*, pp. 26-28, 104, 112-114, 188-199, selecting material carefully.

MEASURES.—Present the following measures, where possible, through objective work, showing equality where a table or part of a table is given:

Square—144 square inches = 1 square foot.  
(9 square feet = 1 square yard.)

Weight—(16 ounces = 1 pound.)  
2000 pounds = 1 ton.

Time—365 days = 1 year, except leap year.  
30 or 31 days = 1 month, except February.  
12 months = 1 year.  
“Thirty days hath September,  
April, June and November.”

Review measures of length (inches, feet, yards), weight (ounces, pounds), liquids (pints, quarts, gallons), time and value.

Use measures in connection with real situations in order that the child may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are simple enough to fall within the formal work covered. Thus: “How many pints in 3 quarts?” “How many quarts in 8 pints?”

### PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems of a single lesson's work deal with a single topic, such as some industry or business. This will make the problems real to the child and prevent the disconnected work which scatters the child's attention over a hundred or more things during one lesson.

All problems are to be presented to the child orally. The child will be given no problems in written (or printed) language

form, though he may perform any necessary operations on blackboard or paper to assist him in solving a problem.

No problem is to involve more than one step reasoning in this grade.

The first problem work should always involve figures that can be handled "mentally." More complicated figures involving the same reasoning with written manipulation of numbers should follow where the reasoning with simple figures is mastered.

In addition to the terms "add" and "subtract," teach the terms "multiply," "divide," for the types of reasoning involved in problems in simple multiplication and division, the special work of this grade. Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do—"add," "subtract," "multiply" or "divide."

For review use oral problems found in *New State Series Arithmetic*, Chap. IV, pp. 115-187.

## A FOURTH GRADE.

TEXT-BOOK.—*New State Series Elementary Arithmetic* in hands of pupils. Follow method of course of study. Use material pp. 178-205, 227-231.

## FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION AND MULTIPLICATION.

DIVISION.—Review carefully long division by one number as long division by two numbers is to be nothing more nor less than an outgrowth of the division work of the previous grade.

Teach long division by two figures, using through the entire grade such divisors as 91, 83, 72, etc., where the second figure is much smaller than the first.

Present long division in the following steps:

- (1) (a) *Object*—To teach use of trial divisor.  
 (b) *Material*—Use dividend that will give one figure in quotient and make first trial divisor the final

$$\begin{array}{r}
 91\overline{)834} \\
 \underline{819} \\
 15
 \end{array}$$

quotient, as in:

- (c) *Process*—"How many 9's in 83?"  
 9 9's in 83."  
 Multiply 91 by 9.  
 Subtract.  
 Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

- (2) (a) *Object*—To teach method of testing.  
 (b) *Material*—Use dividend that will give one figure in quotient, but where first trial divisor is not the final quotient (where the final trial divisor is one less than the first

$$\begin{array}{r}
 88\overline{)827} \\
 \underline{744} \\
 83
 \end{array}$$

trial divisor), as in:

- (c) *Process*—"How many 9's in 81?"  
 "9 9's in 81. Next number—17."  
 "9 3's are 27. 27 is larger than 17, therefore the trial divisor is 8" (one less than 9).  
 Multiply 93 by 8.  
 Subtract.  
 Put remainder in answer.

Give much drill on this step so that the work becomes mechanical.

- (3) Extend the dividend so as to get two figures in the quotient. Later three figures in the quotient.

Give much drill to make the work thoroughly mechanical.

Text-book—Use *New State Series Elementary Arithmetic*, pp. 178-187.

FRACTIONS.—READING AND WRITING OF FRACTIONS.—The child can read, write and change fractions with one figure in the denominator. Extend the work to denominators of two figures as far as 81, using only the numbers learned as products in the multiplication combinations. Make certain that the child can perform with certainty the following changes:

(a) From mixed number (or whole number) to improper fraction.

(b) From improper fraction to mixed number (or whole number).

ADDITION OF FRACTIONS.—Present addition of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

| (a)           | (b)            | (c)            | (d)            |
|---------------|----------------|----------------|----------------|
| $\frac{1}{4}$ | $1\frac{1}{4}$ | $\frac{2}{3}$  | $1\frac{2}{3}$ |
| $\frac{2}{4}$ | $3\frac{2}{4}$ | $\frac{2}{3}$  | $3\frac{2}{3}$ |
| <hr/>         | <hr/>          | <hr/>          | <hr/>          |
| $\frac{3}{4}$ | $4\frac{3}{4}$ | $\frac{4}{3}$  | $4\frac{4}{3}$ |
|               |                | $1\frac{1}{3}$ | $1\frac{1}{3}$ |
|               |                |                | <hr/>          |
|               |                |                | $5\frac{1}{3}$ |

(2) With different denominators, one being a common denominator:

| (a)           | (b)                              | (c) | (d) |
|---------------|----------------------------------|-----|-----|
| $\frac{1}{2}$ | $\frac{2}{4}$                    |     |     |
| $\frac{1}{4}$ |                                  |     |     |
| <hr/>         |                                  |     |     |
| $\frac{3}{4}$ |                                  |     |     |
|               | (Carry through steps b, c and d) |     |     |

(3) With different denominators, none being a common denominator:

| (a)                                                                         | (b)                               | (c) | (d) |
|-----------------------------------------------------------------------------|-----------------------------------|-----|-----|
| $\begin{array}{r} \cancel{1}^1_2 \\ \cancel{1}^1_3 \\ \hline 5 \end{array}$ | $\frac{3}{6}$                     |     |     |
|                                                                             | $\frac{2}{6}$                     |     |     |
| $\frac{5}{6}$                                                               | (Carry through steps b, c and d.) |     |     |

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

After the addition of two fractions (or mixed numbers) is well mastered, give three or four to show that the same principle applies, but keep the examples simple.

Drill on reduction to lowest terms whenever the opportunity occurs.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-205, omitting subtraction of fractions.

DECIMALS.—READING AND WRITING OF DECIMALS.—Teach reading and writing of decimals through three places.

Show that decimals are only a form of common fractions by objective work, or derive the relationship from U. S. money. The child already knows a “quarter” is \$.25, a “half” \$.50, etc.

With very simple numbers show how to make the following changes:

(1) Change a decimal to a fraction.

(2) Change a fraction to a decimal.

MEASURE.—Present the following measures through objective work, showing equality where a table or part of a table is given:

Length—12 inches = 1 foot.

3 feet = 1 yard.

16½ feet or 5½ yards = 1 rod.

Cubic—1728 cu. in. = 1 cu. ft.

27 cu. ft. = 1 cu. yd.

Review measures of area (sq. in., sq. ft., sq. yd.), weight (ounces, pounds, tons), liquids (pts., qts., gals.), time and value.

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible, use the measures as concrete material for the application of formal addition and subtraction. Use one step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus: "How many months in 23 years?" "How many years in 36 months?"

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 227-229, 231.

### PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Generally, all problems are to be presented to the child orally, though he may perform necessary operations on black-board or paper. Written presentation of problems is not required until the Fifth Year. Teachers, at their discretion, may begin such work in this year.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which are presented for the first time in this grade. Present two-step reasoning problems such as the following: "If three pencils costs fifteen cents, what will two cost?" Show that this problem merely contains two simple, one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problems, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

## B FOURTH GRADE.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-205, 229-231.

## FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in READING AND WRITING OF NUMBERS and in column ADDITION, SUBTRACTION and MULTIPLICATION.

DIVISION.—Review long division by two numbers with easy divisors, such as 91, 82, etc. Gradually give more difficult divisors, such as 27, 38, 49, etc. The teacher may show the children on the blackboard how to perform long division with such divisors by “testing,” which is a slow method, then presenting the method of having the children call such divisors as 27, 28, 29, “thirty,” for purposes of getting the partial quotient. Extend the divisor to three or four places in a few lessons just to show that the principles of long division already mastered apply.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from mixed number to improper fraction, and vice versa. Review ADDITION OF FRACTIONS and mixed numbers where the denominator is not above 81.

SUBTRACTION OF FRACTIONS.—Present subtraction of fractions covering common denominators involving two figures, not higher than 81.

First, cover the difficulties with common denominators of one figure, illustrating the truth of the processes objectively, as follows:

(1) With the same denominators:

| (a)           | (b)            | (c)            |
|---------------|----------------|----------------|
| $\frac{4}{5}$ | $6\frac{4}{5}$ | $5\frac{7}{5}$ |
| $\frac{2}{5}$ | $3\frac{2}{5}$ | $6\frac{3}{5}$ |
| <hr/>         | <hr/>          | <hr/>          |
| $\frac{2}{5}$ | $3\frac{2}{5}$ | $2\frac{3}{5}$ |

(2) With different denominators, one being a common denominator:

|                                                                                 |               |                                |
|---------------------------------------------------------------------------------|---------------|--------------------------------|
| (a)                                                                             | (b)           | (c)                            |
| $\begin{array}{r} \frac{3}{4} \\ \frac{1}{2} \\ \hline \frac{1}{4} \end{array}$ | $\frac{2}{4}$ | (Carry through steps b and c.) |

(3) With different denominators, none being a common denominator:

|                                                                                 |                                            |                                |
|---------------------------------------------------------------------------------|--------------------------------------------|--------------------------------|
| (a)                                                                             | (b)                                        | (c)                            |
| $\begin{array}{r} \frac{3}{3} \\ \frac{1}{2} \\ \hline \frac{1}{6} \end{array}$ | $\frac{4}{6}$<br>$\frac{3}{6}$<br>$\hline$ | (Carry through steps b and c.) |

Later, cover the same difficulties with common denominators that fall within the multiplication combinations learned.

Drill on reduction to lowest terms whenever the opportunity occurs.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-205.

DECIMALS.—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction, and vice versa.

ADDITION AND SUBTRACTION OF DECIMALS.—Teach addition and subtraction of decimals of three places in this grade. Give a preliminary drill in arrangement of decimals according to the decimal point. When the children can arrange the numbers, teach bringing down the decimal point. Then add or subtract as with whole numbers, thus:

|     |                            |     |                            |
|-----|----------------------------|-----|----------------------------|
| (a) | 81.05                      | (b) | 974.02                     |
|     | 9.156                      |     | 6.045                      |
|     | 70.84                      |     | <hr style="width: 100%;"/> |
|     | <hr style="width: 100%;"/> |     | <hr style="width: 100%;"/> |
|     | 161.046                    |     | 967.975                    |

Later, extend the decimal places in a few exercises to show that the same principle applies.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 229-231.

MEASURES.—Add to the measures already learned the following:

- Length—5280 feet = 320 rods = 1 mile.
- Square— $30\frac{1}{4}$  sq. yards = 1 square rod.
- 160 square rods = 1 acre.
- 640 acres = 1 square mile.
- Cubic—1728 cubic inches = 1 cubic foot.
- 27 cubic feet = 1 cubic yard.
- 128 cubic feet = 1 cord.

Review measures of liquid (pt., qt., gal.), weight (oz., lb., ton), U. S. money and time, and also previously learned parts of linear (in., ft., yd.), and square measure (sq. in., sq. ft., sq. yd.).

Use measures in connection with real situations in order that children may know for what kinds of things the measures are used, particularly in buying.

Wherever possible use the measures as concrete material for the application of formal addition and subtraction. Use one-step reduction of denominate numbers as a concrete application of formal multiplication and division, wherever the numbers are not too difficult for the children. Thus: "How many months in 23 years?" "How many years in 36 months?"

## PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention. Generally, all problems are to be presented to the child orally, though he may perform necessary operations on blackboard or paper. Written presentation of problems is not required till the Fifth Year. Teachers, at their discretion, may begin that work in this year.

Review problems involving one-step reasoning, as they form the basis for solving problems with two-step reasoning which constitute the special work of this year. Give two-step reasoning problems, such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems, such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

### A FIFTH GRADE.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-226, 229-234.

#### FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS with changes from decimal to fraction and vice versa.

ADDITION AND SUBTRACTION OF FRACTIONS.—Review addition and subtraction of fractions with common denominators of two figures up to 81.

Add and subtract fractions involving common denominators larger than 81. Proceed by the following steps:

(1) (a) Object—To find common denominator for several fractions.

(b) Material—Fractions, with denominators of two figures, not above 81  $\frac{5}{12}$ ,  $\frac{7}{18}$ .

(c) Process—

|   |    |    |    |   |    |    |
|---|----|----|----|---|----|----|
| 3 | 12 | 18 | or | 6 | 12 | 18 |
| 2 | 4  | 6  |    |   | 2  | 3  |
|   |    |    |    |   |    |    |
|   | 2  | 3  |    |   |    |    |

Common denominator is the product of  
 $3 \times 2 \times 2 \times 3$  (or  $6 \times 2 \times 3$ ) or 36.

(2) Proceed to change fractions from one denominator to common denominator as with simpler figures, and add or subtract as before.

Merely give enough work in finding common denominator to fix the method. Give no more work with common denominators above 81 than is necessary to apply the factoring process.

**MULTIPLICATION OF FRACTIONS.**—Present multiplication of fractions by the method of “cancellation”, thus:  $\frac{2}{3} \times \frac{3}{4} = \frac{1}{2}$ . Drill specially on cancellation. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process to reality. Give no other explanation. Drill the children until they are able to multiply the following with habitual and mechanical ease. :

- (1) (a) Fraction by integer.  
      (b) Integer by fraction.  
      (c) Fraction by fraction.
- (2) (a) Mixed number by integer.  
      (b) Integer by mixed number.  
      (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures up to 81. When the preceding work has been thoroughly mastered a few exercises with larger denominators might be given, merely to show the children that the same method of operation applies.

**TEXT-BOOK.**—Use *New State Series Elementary Arithmetic* pp. 188-226, omitting division of fractions.

**DECIMALS.**—Review READING AND WRITING OF DECIMALS, with changes from decimal to fraction and vice versa. Also review ADDITION AND SUBTRACTION OF DECIMALS.

**MULTIPLICATION OF DECIMALS.**—Teach multiplication of decimals (of three places) in this grade. First, multiply as though both multiplier and multiplicand were whole numbers. Then count up the total number of figures in decimal places in both multiplier and multiplicand. Finally point off, from the right, the same number of figures in the product and place the decimal point. Thus:

$$\begin{array}{r}
 42.56 \\
 7.5 \\
 \hline
 21280 \\
 29792 \\
 \hline
 319.200
 \end{array}$$

Teach the process of "pointing off" as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 229-234.

DENOMINATE NUMBERS.—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

### PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child, so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures that can be handled "mentally." More complicated figures necessitating written work may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

## B FIFTH GRADE.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-226, 229, 234, 238-256.

## FORMAL WORK.

WHOLE NUMBERS.—Give regular and frequent reviews in reading and writing of numbers, in column addition, subtraction and multiplication, and in long and short division.

FRACTIONS.—Review READING AND WRITING OF FRACTIONS, ADDITION, SUBTRACTION AND MULTIPLICATION OF FRACTIONS.

DIVISION OF FRACTIONS.—Present division of fractions by the method of “inversion and cancellation,” thus:

$$\frac{3}{4} \div \frac{1}{8} = ? \qquad \frac{3}{4} \times \frac{8}{1} = 6$$

Drill specially on inversion. All answers should be in simplest terms. At first use only fractions with denominators of a single figure, using objective work to show correspondence of the process with reality. Give no other explanation. Drill the children until they are able to divide the following with habitual and mechanical ease.:

- (1) (a) Fraction by integer.  
      (b) Integer by fraction.  
      (c) Fraction by fraction.
- (2) (a) Mixed number by integer.  
      (b) Integer by mixed number.  
      (c) Mixed number by mixed number.

Later, use fractions with denominators of two figures, up to 81. When the preceding work has been mastered, a few exercises with larger denominators might be given merely to show the children that the same method of operation applies.

TEXT-BOOK.—Use *New State Series Elementary Arithmetic*, pp. 188-226.

DECIMALS.—Review READING AND WRITING OF DECIMALS, ADDITION, SUBTRACTION AND MULTIPLICATION OF DECIMALS.

**DIVISION OF DECIMALS.**—Teach division of decimals (of three places) in this grade. First, give a preliminary drill in placing the decimal point in the quotient space. Thus:

$$8.3 \overline{) 9175.64} \quad \text{or} \quad 8.3 \overline{) 750.}$$

**STEPS:**

(2) Count the same number of places to the right of the decimal point in the dividend, and place a decimal point in the corresponding place in the quotient space.

(3) Divide as for whole numbers.

Teach this process of “pointing off” as a purely mechanical one. Do not teach by memorizing a rule, but by having the child do it repeatedly. Give much drill.

**TEXT-BOOK.**—Use *New State Series Elementary Arithmetic*, pp. 229-234, 238-244.

**DENOMINATE NUMBERS.**—Review the measures of length (in., ft., yd., rd., mi.), area (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi.), volume (cu. in., cu. ft., cu. yd., cord), liquid (pt., qt., gal.), weight (oz., lb., ton), time and United States money.

Use measures in connection with real situations in order that children may know for what kind of things the measures are used in actual life.

Use two-step reduction, up and down, showing that two-step reduction is nothing but one-step reduction repeated. Do not continue the work after the principle is mastered.

**TEXT-BOOK.**—Use *New State Series Elementary Arithmetic*, Chap. VI, pp. 245-256.

### PROBLEMS.

All formal work should be given in problem form as soon as mastered. As far as possible make the problems real by having those in a single lesson deal with some industry or business. This will also prevent a scattering of the attention.

Drill the child on problems presented to him in written or printed form, as the child now has sufficient power to get the meaning from the blackboard or book. The teacher should always be certain that the language is within the comprehension of the child so as not to confuse or puzzle him.

Drill on two-step reasoning problems such as the following: "If three pencils cost fifteen cents, what will two cost?" Show that this problem merely contains two simple one-step problems such as they have mastered.

The first problems should always involve figures than can be handled "mentally." More complicated figures, necessitating written work, may be employed later, but only after the reasoning principle is thoroughly grasped.

Wherever the figures in an example demand written manipulation, always have the children, after hearing the problem, state what they are going to do in terms of "add," "subtract," "multiply" and "divide."

## A SIXTH GRADE.

REVIEW OF FORMAL WORK.—There should be frequent and regular drill on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

PERCENTAGE.—The arithmetic work of the sixth year is given over to the treatment of percentage. In this grade the emphasis is on formal work in percentage, though the principles of percentage should receive constant application at every point. Special drill should be given on the following formal processes:

- (1) To find any per cent of a number.
- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.

Present percentage in its relation to decimals and common fractions, showing how to change from one to the other readily. The percentage equivalents of the most common fractions should be learned and used as the basis of much "mental" work. (*State Series Gram. Sch. Arith.*, p. 216.)

Apply percentage to simple, real situations, that the child is likely to need to understand in terms of per cent. Use simple interest, in years only, as one easy application of percentage.

Use *State Series Gram. Sch. Arithmetic*, as a text, selecting necessary material from pp. 216-228. Teachers may use *Smith's Grammar School Arithmetic* as a desk book from which to gather further material. (See pp. 181-184.)

**BUSINESS LIFE.**—Discuss the topic of “Going into Business.” (See *Smith*, pp. 306, 307), showing that every person whether he conducts a business, works on a wage, or draws an income, needs to be “businesslike.” Discuss the following sub-topics: Simple Accounts (*Smith*, p. 338), Bank Accounts, Savings Banks, Banks of Deposit (*Smith*, pp. 326-329). Show how to make out the following business forms: Simple Accounts, Deposit Slip, Check (*Smith*, pp. 328, 329, 204), Receipted Bill and Receipt (*Smith*, pp. 125, 136, 205.)

## B SIXTH GRADE.

### REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

**PERCENTAGE.**—Review formal percentage, particularly the following processes:

- (1) To find any per cent of a number.
- (2) To find what per cent one number is of another.
- (3) To find a number when a certain per cent of it is given.
- (4) To change any per cent to decimal and common fractions, or the reverse.

### BUSINESS APPLICATIONS.

As the work of the previous grade emphasized the formal work of percentage, the work of this grade emphasizes its application to business life. The special topic for this grade is “The Buying and Selling of Goods,” and covers the sub-topics: “*Merchandising*,” “*Commission*,” and “*Trade Discount*.” The teacher should discuss the nature and function of these various business relations before giving the technical and mathematical methods of computation used in the same. This information is just as valuable as the mere arithmetic and serves to make the latter seem more real and useful to the child.

**MERCHANDISE.**—Teach profit and loss in buying and selling of goods. Give simple problems that business men must solve every day. Avoid complicated problems with three and four steps in reasoning. Use *State Series Gram. Sch. Arithmetic* as a text, selecting necessary material from pp. 228-230. Teacher

may find additional material in *Smith's Grammar School Arithmetic*, pp. 194-197, which may be used as a desk book.

COMMISSION.—Teach the method of computing commissions for buying and selling goods. Stick to actual commission problems, avoiding complicated problems that are puzzling and unreal. Avoid problems, part of the data of which is in previous examples. Use *State Series Gram. Sch. Arithmetic*, selecting necessary material from pp. 230-233. Additional material may be found in *Smith's Arithmetic*, pp. 199-201.

TRADE DISCOUNT.—Teach the process of computing trade discount. At first, avoid all examples mixing discount with profit and loss, etc. Two-step reasoning should be the limit in any problem, unless the principles involved are exceedingly simple. Use *State Series Gram. Sch. Arithmetic*, selecting necessary material from pp. 233-236. Additional material may be found in *Smith's Arithmetic*, 335-337. Have the children write orders and bills as suggested in *Smith*, p. 337.

## A SEVENTH GRADE.

### REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

### BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is "*The Borrowing and Loaning of Money*," and covers the special topic of "*Interest*," with some incidental treatment of "*Promissory Notes*," "*Partial Payments*" and "*Compound Interest*." Our whole system of loaning and borrowing money, with the function of banks, should be explained to the class before computing interest or writing notes.

INTEREST.—Simple interest for years has been taken up as an application of percentage in the A Sixth Grade. In this grade study interest for years, months and days, calculated by the six per cent method. The methods of "inexact interest" and "exact time" are to be used.

In teaching interest develop the subject so as to show the children that the *principal* multiplied by the *rate* equals the *interest for one year*; that the interest for one month may be found by dividing the interest for one year by 12, and for any number of months by multiplying this quotient by the number of months required; that the interest for one day can be found by dividing the interest of one month by 30, and for any number of days by multiplying this quotient by the number of days required.

FORM:

|            |                     |    |                           |
|------------|---------------------|----|---------------------------|
| Principal  | \$300               |    | \$300                     |
| Rate       | 3%                  |    | .03                       |
| Time       | 2 yr., 3 mo., 4 da. | 12 | $9.00 \times 2 = \$18.00$ |
| Interest ? |                     | 30 | $.75 \times 3 = 2.25$     |
|            |                     |    | $.025 \times 4 = .10$     |
|            |                     |    | <hr/> \$21.35 Int.        |

The six per cent method should then be developed by finding the interest on \$1 at 6% for different times. Then the fact that the interest of \$1 for one year is 6 cents, for one month 5 mills, and for one day  $\frac{1}{6}$  of a mill, will not be a blind, mechanical memorization. It will be understood. Such examples as 240-251, p. 239, in *State Series Gram. Sch. Arithmetic* will furnish the type of drill suggested.

Form for 6% method:

|                          |         |                   |                             |
|--------------------------|---------|-------------------|-----------------------------|
| Principal                | \$25.75 | \$ .06            | $\times 5 = \$ .30$         |
| Rate                     | 6%      | \$ .005           | $\times 8 = .04$            |
| Time, 5 yr. 8 mo. 12 da. |         | $.000\frac{1}{6}$ | $\times 12 = .002$          |
| Interest ?               |         |                   | <hr/>                       |
|                          |         |                   | .342 Int. \$1 at 6%.        |
|                          |         |                   | 25.75                       |
|                          |         |                   | <hr/>                       |
|                          |         |                   | 1710                        |
|                          |         |                   | 2394                        |
|                          |         |                   | 1710                        |
|                          |         |                   | 684                         |
|                          |         |                   | <hr/>                       |
|                          |         |                   | 8.80650 Int. \$25.75 at 6%. |

Note that the 6% method assumes the 360 day year, now common in business calculations, e. g. in the preparation of interest tables, etc. (Later use the interest table and exercises in *Smith's Gram. Sch. Arith.*, p. 302). Practically, EXACT INTEREST is not paid any longer, except by the government. The 360 day year has replaced the 365 day year. Another change in business methods needs to be noted by the teacher—interest is now charged for every day the note runs. EXACT TIME is used in all calculations of financial institutions. It *cannot be found by compound subtraction*. The exact time is found by COUNTING the days from one date to another, or by employing tables for the purpose. (Use table and exercises *Smith's Gram. Sch. Arith.*, p. 301.)

Form:

Exact time from Jan. 1, 1898, to July 7, 1899, would be found thus:

Jan. 1, 1898, to Jan. 1, 1899—1 yr.

Jan.— 30 days.

Feb.— 28 “

Mar.— 31 “

Apr.— 30 “

May— 31 “

Jun.— 30 “

Jul.— 7 “

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187 days.

Use examples in *State Series Gram. Sch. Arith.*, pp. 166-167, exs. 217-231; p. 240, exs. 300-308; p. 245, exs. 354-358; and p. 246, exs. 361-363, 367. (The answers will vary from those given in the book.)

Further drill material may be found in *Smith's Grammar School Arithmetic*, pp. 299-305, which may be used as a teacher's desk book.

Have the class write promissory notes, explaining their use and meaning. (See *State Series Gram. Sch. Arithmetic*, pp. 244, 245.) Treat partial payments and compound interest briefly, merely showing that they are both applications of simple interest, one being a decrease of the principal and the other an increase. Tell where and how they are used. No long and involved problems.

In Bank Discount give a very simple and short treatment

suggesting the principle that discount is always calculated on the maturity value, not the face value.

## B SEVENTH GRADE.

### REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

### BUSINESS APPLICATIONS.

The study of arithmetic as applied to business is continued in this grade. The special topic for the term is "*The Protecting of our Business Interests*," and includes the sub-topics of "*Insurance*" and "*Taxes*." Before treating the processes the class should discuss the institutions of Insurance and Taxation. The first is our way of paying a company for protection against accident, fire, water, etc. The second is our way of paying the government for protecting us against disorder, violence and lawlessness.

**INSURANCE.**—Discuss both Property and Personal Insurance, but teach the class to work examples only in Property (or Fire) Insurance, omitting all examples in Personal (or Life) Insurance. Use *State Series Gram. Sch. Arithmetic* as a text, selecting necessary material from pp. 254, 255. Further material may be found in *Smith's Grammar School Arithmetic*, pp. 359, 360, which may be used as a teacher's desk book.

**TAXES.**—Discuss the various forms of taxation. Compute only Property Tax. Omit all examples in indirect taxation, such as Duties and Customs, Internal Revenue, etc. Select necessary material from *State Series Gram. Sch. Arithmetic*, pp. 259-261. For additional material see *Smith's Arithmetic*, pp. 357, 358.

## A EIGHTH GRADE.

### REVIEW OF FORMAL WORK.

There should be frequent and regular drills in the four fundamental operations as applied to integers, common fractions and decimals. Review commonly used tables of measure.

Give short reviews in the formal methods of applying percentage as used in Merchandising, Commission, Trade Discount and Interest. Select necessary material from the text, *State Series Gram. Sch. Arithmetic* and *Smith's Grammar Sch. Arithmetic*, which may be used as a teacher's desk book. Page references are as follows: Merchandising, (*State*, 228-230) (*Smith*, 194-197); Commission (*State*, 230-233) (*Smith*, 199-201); Trade Discount (*State*, 233-236) (*Smith*, 335-337); Interest (*State*, 236-243) (*Smith*, 299-305).

**RATIO AND PROPORTION.**—Present the idea of ratio with much concrete work. Much drill in its application as it forms a basis for work in proportion. Take only problems with the simple relation of two parts, omitting all complicated applications. Use *State Series Gram. Sch. Arithmetic* as a text, selecting necessary material from pp. 199-209. For further material see *Smith*, pp. 217-222.

Present the idea of proportion with much concrete work. Use the so-called "cause and effect" method of explaining proportion.

$$\begin{array}{cc} 2 & 10 \\ 3 & 15 \end{array}$$

Thus:  $2 : 3 :: 10 : 15$ , or  $\frac{2}{3} = \frac{10}{15}$  may be expressed concretely by

saying, "If two pencils cost 10 cents, then three pencils must cost 15 cents." Use only such problems as express the simple proportion relation clearly. Select necessary material from *State Arithmetic*, pp. 340-348. Further material may be found in *Smith*, pp. 223-233.

### BUSINESS APPLICATIONS.

In this grade the study of arithmetic as applied to business is continued. The special topic for this grade is "*Business Cooperation*," which includes the sub-topics of "*Partnership*" and "*Corporations*." Discuss the place of each in our business life. Have the children work out simple partnership examples as an application of ratio and proportion. Omit all computations relating to Corporations, such as Stocks and Bonds.

For problems in partnership select necessary material from *State Arithmetic*, "Proportional Parts," pp. 348-351. Further material may be found in *Smith*, pp. 339-340. Select no problems where more than one simple proportion is involved.

## B EIGHTH GRADE.

## REVIEW OF FORMAL WORK.

There should be frequent and regular drills on the four fundamental operations as applied to integers, common fractions and decimals.

Review the commonly used measures, such as linear (in., ft., yd., rd., mi.); square (sq. in., sq. ft., sq. yd., sq. rd., acre, sq. mi., township), and cubic measure (cu. in., cu. ft., cu. yd.), and measures of weight (oz., lb., ton), liquid (pt., qt., gal.), time and U. S. money.

Give short reviews in the formal methods of computing Property (or Fire) Insurance, Property Taxes (State and Local) and Partnership. Select necessary material from the text, *State Series Gram. Sch. Arithmetic* and *Smith's Grammar School Arithmetic*, which may be used as a teacher's desk book. Page references are as follows: Insurance (*State*, 254, 255) (*Smith*, 359, 360); Taxes (*State*, 259-261) (*Smith*, 357, 358); Partnership (*State*, 348-351) (*Smith*, 339, 340).

## APPLIED MEASUREMENTS.

Present such applications of measurements as are commonly used with reference to lines, angles, surfaces and solids. Give only the simplest problems of each type.

**LINES.**—Have the class understand what is meant by vertical, horizontal, oblique and parallel lines, using concrete work.

**ANGLES.**—Give concrete work, illustrating right, acute and obtuse angles. (*State Arith.*, p. 367.)

Apply angular or circular measure, using degrees only, to various angles, giving some idea as to what is meant by angles of 90 degrees, 45 degrees, etc. Select simple material from *State Arith.*, pp. 400, 401.

**SURFACES.**—Give concrete work, illustrating the various quadrilaterals and triangles and the circle. Teach finding the surfaces of the same, omitting trapezium, polygons and other difficult applications of measure. Later, when the children can recognize the solids, teach finding the surface of a rectangular

prism. Carefully select simple material from *State Arith.*, pp. 365-383, and also see *Smith*, pp. 308-310, 319.

In connection with finding the surface of a square, treat the finding of a side of a square. Teach the formal process of SQUARE ROOT in this connection. Limited application to right-angled triangles. Select simple material from *State Arith.*, pp. 322-332, and see *Smith*, pp. 311-317.

SOLIDS.—Give concrete work, illustrating prisms, cylinder, pyramid, cone and sphere. Teach finding cubic contents of rectangular prism and cylinder only. Carefully select simple material from *State Arith.*, pp. 383-397, and also see *Smith*, p. 320.

## INTRODUCTION TO GEOGRAPHY.

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Geography treats of the earth in its relation to man. It should give the child many facts useful for business or general intelligence. It should teach him how and where to find additional facts when needed.

These facts, however, should not be isolated, but should be taught in casual relation, thus making Geography elementary science.

The forces of nature largely control geographic conditions, but human influence has nearly or quite as great a place. Man has changed the vegetation and animals of a large part of the globe. The use which man makes of natural resources is governed largely by economic considerations. Thus physical Geography and economics form the background of Geography. These may be taught to children in elementary form.

The forces which have shaped the great features of the earth may be observed all about us. The influence of streams in erosion, transportation and deposit of sediment, the formation of hills, valleys, canyons, deltas, waterfalls, etc., may be as well seen and as well understood in the rivulet as in the mighty river, for the child may in a few minutes trace every part of a river system. Let his imagination magnify this and he has "The Father of Waters." Mapping this outdoor geography first with sand, then with chalk, will give a key to the proper interpretation of maps.

The elements of commerce and economics are as easily observed as the forms of land and water. The principles governing the commerce of nations are involved in the buying and selling which the child sees daily. Division of labor studied in the most elementary form in the home, the school, establishments of few workmen, and later in larger establishments makes the child understand the cheapened cost of articles produced by the united effort of many skilled laborers. It is then clear that cheapened transportation enables communities to specialize in the production of that article for which their natural conditions are best suited, and that all other articles are obtained most cheaply by exchange. Manufacturing and trade centers follow as necessities from this larger division of

labor, and commerce is no longer an independent element, but an outgrowth of all other occupations. History may be seen as an outgrowth, in large part, of geographic conditions.

### USE OF MAPS.

Maps are used for study and for reference. The study map should contain but few names. Children should be trained to use reference maps by looking up many map questions which they are not required to remember. All surfaces should be first studied from relief maps. Relief in sand has the advantage that it may be quickly made and cut across with sharp-edged ruler to show slopes. Sand relief maps should give only general features of surface. *Do not exaggerate elevation more than is really necessary.*

Outline maps without names are useful aids in study. The child may look from his book to the outline map to test his knowledge. Such maps may be put on the blackboard with stencil. Children should not draw maps from the book, copying all the details. Free hand sketching of maps giving good proportion and most important features is all that should be attempted. This should generally be done *with the teacher's drawing as a guide.*

Product maps may be made on the blackboard, window shade, or black paper with colored crayons. These should give only the most important products and their general distribution. *Children must understand that the color used in a region represents the thing produced there in excess of local needs. Everything produced cannot be represented.* The area of a product is indicated by the extent of space colored, the quantity of product may be indicated roughly by the amount of color put on that space.

Thus—An area with a few scattering dots of yellow (the rest of the space uncolored) shows a region where wheat is sparsely produced, a region completely covered with yellow shows that wheat is the chief product and produced in large quantities.

A few scattered dots of green (the rest of the space uncolored) may show a barren region where grazing is the only occupation but with a small output, a region quite thickly scattered

with green shows a more fertile country with a large output of stock.

In a mining country mines may be rich but far apart and so the dots of bright color are scattered. In the cotton fields of the South the white should be put on as thickly as possible.

The following colors are suggested for product maps, others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruit, pink; dairy products, white streaked; petroleum, dark gray.

A light gray window shade is the best material for a product map, the neutral tint gives a good background for the colors and in a region of sparse production shows well the scattered dots of color for the product. Window shade fixtures should be fastened on the moulding above the blackboard so that the map will be rolled up when not in use. Every schoolroom must have its relief, rainfall and product maps. Do not entrust this work to children for they have not the teacher's skill.

Many maps not furnished by the school will be found useful to the teacher. These may be made with crayon on black paper or window shade and used again and again. Such are maps representing winds and ocean currents, rainfall, temperature, population, products and trade routes. Some of the maps in the books will be more useful if thus enlarged, so that the entire class may see them at once. The amount of rainfall should be indicated by shading, not by colors. Rain is the same color the world over, different regions varying only in amount; color should be reserved for products.

### TEXT-BOOKS.

The *Introductory Geography* is used at first as a guide to the teacher only. Its earlier pages contain much matter not especially adapted to our schools. Teachers, however, will get suggestions by reading over these pages.

The *Grammar School Geography* is both a text-book and a reference book. The large print contains matter, most of which every intelligent person should know. The fine print should be read in class and discussed with open book, but little of it learned. The child will thus have some acquaintance

with this material and know where to find it when needed. The matter contained in the large print should be impressed upon the mind by vivid concrete pictures supplied by parallel and supplementary reading. (See Parallel Reading.)

The facts of Physical Geography are *told* in their special application to each continent studied; the *explanations* are left for the Eighth Grade, where Physical Geography is made a special study.

Thus in studying North America the children are told the effect on temperature of distance from the Equator, the effect on the adjoining coast of warm and cold ocean currents, the effect of mountain ranges in turning moisture laden winds into upper cooler regions.

Winds and ocean currents are not explained but the effects of particular wind and ocean currents are used to explain climate, fertility of soil and productions.

### GEOGRAPHICAL EXCURSIONS.

Occasional excursions should be made to observe surface features (outdoor geography), building operations, manufacturing, shipping, commerce, etc. Each school must arrange with the places it can visit. Business men are very obliging, but children must not be sent alone to these places.

What has been observed in such excursions should be made the basis of much reading and discussion. Every bit of concreteness thus put into the work will serve as a nucleus about which will cling a large amount gathered from reading. An ounce of concreteness leavens a pound of abstractness. Thus a class observing the unloading of a ship at the water front will go back to its school and read with interest of the lumbering operations of California, Oregon, Washington, Maine, Michigan, Wisconsin, South Carolina, Georgia, and will trace the lumber of each section to the markets which it supplies. A visit to the woolen mills will add new interest to all that is read of the mills of New England, England, France and Germany, and to the great sheep ranges from which the wool is obtained. Even the sight of cotton bolls on the dried plant will carry the children to the cotton fields of the sunny South, of India and of Egypt. A few strokes of the crayon on an outline map will fix in the minds of the children the regions which produce most of our clothing. We talk much of things which are but words to the children, when specimens and samples can be easily obtained. Every

school should have a museum of geography. By adding interest to the study it would greatly lessen the work of the teacher.

Good geography material may be obtained from the Board of Trade and the rooms of the Promotion Committee. Teachers should not send children but go in person.

Use the globe on every possible occasion. Keep each globe in the room where it is most often needed and let other classes send for it when they want it and when through with it return it to its proper room. The globe should be kept in the classroom and not in the library or principal's office. It should always be somewhere in sight of the children.

## OUTLINE IN GEOGRAPHY.

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### B SECOND GRADE.

Eight points of compass.

Names and directions of streets immediately about the schoolhouse.

Give first impressions of mile and half-mile by distances to well-known places.

Have children estimate distance to a few places in the city.

Study, by observation, hills and valleys nearest the schoolhouse, then model the same in moist sand. Do not over-exaggerate elevation.

Study map of San Francisco. If possible, let first impressions be given from map in horizontal position correct with points of compass. The map is a picture of the city as it might be seen from a balloon. Locate important places—Market Street, Ferries, Presidio, Golden Gate Park, City Hall, the schoolhouse and others near the school.

### A THIRD GRADE.

Study (from observation as far as possible) soil, hills, mountains, valleys, rivers, ponds, and lakes, the bay and ocean, peninsula, island, cape. (Refer to *Introductory Geography*. State Series, Part I, Sections 1 to 8.)

From blackboard and sand table teach principal points of San Francisco, San Francisco and San Pablo bays, the peninsula as far south as San Jose, the Alameda and Contra Costa Counties shore line back to and including the mountain range, and the Marin County peninsula. The sand relief maps should show the outlines of the two arms of the bay, the coast line, the upper part of the Santa Clara Valley, the Golden Gate, Mt. Tamalpais, Angel Island, Alcatraz Island, Goat Island, Farallone Islands, Oakland, Berkeley, Alameda and Sausalito. (See *Introductory Geography*, 255 to 258.)

During the rainy season study the effects of stream erosion, transportation and deposit of sediment. Streams are rivers in miniature, having source, mouth, banks, bed, rapids, falls, deltas, basins and divides. The forces that work in great rivers may be seen in the streams about our schoolhouses. The

teacher may draw map of locality indicating these streams. Knowledge thus gained may be applied to the interpretation of maps. The study of the small stream which the child sees gives a key to the river which he cannot see. *Tarr's Physical Geography*, *Le Conte's Compend of Geology* and *Fairbank's Home Geography* will be suggestive to the teacher.

Teach natural features of the Bay Counties from map or sand table. (Refer to Part I, Sections 1 to 8, in *Introductory Geography*, as far as can be applied.)

### B THIRD GRADE.

Continue the study of Outdoor Geography begun in A Third Grade.

Teach orally simple applications of division of labor seen in the family, the school, a small store, a street car, and the erection of a building. Note that each laborer becomes very skillful by confining himself to one thing, and that many laborers combine their efforts to produce the better or the cheaper article. Note what each laborer performs in the erection of a building. Where do the materials used in the building come from and how are they transported? What articles of food and clothing does the city obtain from the country? What does the city do in return for these articles? Talk of a few manufacturing or wholesale houses nearest your school.

Sections 3 and 5, *Introductory Geography* (State Series).

If time permits, teacher may read to the children Jane Andrew's Seven Little Sisters.

### A FOURTH GRADE.

Discuss division of labor in some large establishment, such as Cannery, Iron Works, Woolen Factory, Planing Mill, Department Store, etc., to which an excursion has been made.

Continue the study of Outdoor Geography. By questions direct observation of natural phenomena.

*Introductory Geography*, Part I, Sections 7, 8 and 9, book in the hands of the children.

The Bay Counties: Product regions, indicated by colored areas on the map; dairy products, fruit, wine, grain, etc.; locate trade center for each product area; teach railroad and water

communication; chief market for each product; what is received in exchange.

Measure distances by using scale of miles, but do not memorize distances.

#### STUDY OF CALIFORNIA.

1. Present relief map of California on the sand table correct with points of compass. Do not over-exaggerate relief. Cut map to show slopes; elongated profile of cut section reducing elevation, drawn by teacher on blackboard. Draw east and west profile on east and west board, north and south profile on north and south board. From relief have children study mountains, valleys, slopes, etc.; locate drainage basins and rivers.

2. On relief and wall map locate Cape Mendocino, Point Reyes, Point Arena, Point Conception, Humboldt Bay, San Francisco Bay, Santa Cruz Bay, San Pedro, San Diego Bay.

3. Put on board a map showing prevailing winds, temperature and rainfall. (See California section of the Climate and Crop Service of the Weather Bureau.)

4. Show board or wall map and call attention to rivers and lakes resulting from rainfall and slopes.

5. Teach location of Sierra and Coast Range Mountains, Mt. Tamalpais, Mt. Diablo, Mt. Hamilton, Mt. Shasta and Mt. Whitney; of Sacramento, San Joaquin and Klamath Rivers; of Lake Tahoe and Lake Tulare.

If time permits the teacher may read Aunt Martha's Corner Cupboard to the class.

#### B FOURTH GRADE.

6. Review California studied in previous grade.

7. Teach children to trace California freehand, putting in locations learned in A Fourth.

8. In oral discussion have children trace California products found in our stores and markets to parts of State from which they come; fruits (apples, oranges, cherries, grapes, etc.), nuts, raisins, beans, butter, meat, flour, lumber, gold.

9. Make progressive product map, using colored crayon.

Discuss regions in which each article is produced and climate essential to it; use pictures and give vivid word pictures of each product region; then teacher color the area on blackboard map, children coloring their own maps at blackboard or seats. Why does each region produce chiefly one article? How are other articles secured more easily by exchange? Explain economy in this large division of labor. Compare Robinson Crusoe, Colonial life, life among the Indians.

10. Show growth of trade center in each region (transportation and commerce as producers of wealth).

11. Exchange of goods by railroads, boats, etc.

12. In a broad view of the State, from the completed product map, what do we produce more than we need? Where do we send it? What do we get in return? Teach San Francisco as the trade center for *the State*.

*Introductory Geography*, pages 92 to 119, in the hands of the pupils.

13. Use scale of miles to measure distances in the State, but do not commit to memory.

Read from Chamberlain's *How We Are Fed*, The Past and the Present, The Story of a Loaf of Bread, How Our Meat is Supplied, Market Gardening, Dairy Products, Butter Making, The Orange Groves of Southern California, A Visit to a Vineyard.

Use text, pages 257-283, for reference.

## A FIFTH GRADE.

### GLOBE STUDY.

From the globe teach shape and size of the earth, continents and oceans, equator, tropics, arctic circle and poles, motions of earth producing change of seasons and day and night. The earth turns through  $360^\circ$  in twenty-four hours, or  $15^\circ$  each hour. It turns toward the east. Places east have later time. Places west have earlier time. Give simple problems for places east and west of San Francisco  $15^\circ$ ,  $30^\circ$ ,  $45^\circ$ ,  $60^\circ$ . Thus: When it is 12 o'clock in San Francisco what time is it  $15^\circ$  east of here?  $30^\circ$  east?  $15^\circ$  west?  $30^\circ$  west? When it is 12 o'clock here what time is it at all points directly north? directly south?

*Introductory Geography*, pages 119 to 124. If time permits, teacher may take Section 4, Part II, or may read and explain to class without having them learn.

## NORTH AMERICA.

1. Locate North America on the globe; note its relation to the equator; Tropic and Arctic Circle, to other continents and to the oceans.

2. Present North America in relief on the sand table and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief. Teacher draw elongated profiles of the relief. (See California A Fourth Grade.)

3. Tell facts of ocean currents, winds, pertaining to North America. Do not explain winds and currents. Indicate on blackboard map prevailing winds and ocean currents. (See *Grammar School Geography*, pages 26 and 27.)

4. Put on blackboard rainfall map. (See *Grammar School Geography*, State Series, page 46.)

5. Compare winds and currents, rainfall map and relief map. Where will there be most rivers? In what direction will they flow? Look at wall map. Confirm conclusions.

6. Now study map questions and political divisions on pages 139 and 140.

## BROAD STUDY OF THE UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole. Then as each section is studied its relations to other sections and to the whole will be clearly seen.

Apply on a still larger scale division of labor. This principle has been seen in the Home Geography, in the building of the house and in the manufacturing establishment. In these each workman was a skilled specialist. In the study of the State, labor was divided among communities according to natural resources, each locality becoming skilled in the production of a special commodity.

From previous study review climate, drainage and soil of the United States.

Trace California products to Eastern markets, thus enlarging the geographic horizon through home interests. What do we receive in return? Where produced?

On the blackboard map mark product regions of the United States, using colored crayons. Begin with the most prominent

products of California, as wheat, livestock, lumber, fruit. As far as time will permit, give vivid pictures of each region studied. *Tarr & McMurry's Geography*, Book II; Carpenter's *North America*, King's *Picturesque Geographical Readers*, *Youth's Companion Reprints* (except article on raisins) contain good illustrations and word pictures. *The product map of the United States must be studied as a whole before any section of states is studied in detail.* Individual states or groups of states need not be drawn by the pupils; time can be spent to better advantage.

What advantage has each section in soil and climate for its product? How and where obtain other products in exchange? Locate trade center in each region. What are its advantages as a trade center? Put in the great continental lines of railroad. These railroad lines are as important in the map as the rivers or coast line.

The area of a product is indicated by the extent of space colored; the quantity of product may be indicated roughly by the amount of color put on that space. See introduction to Geography.

In a general view of the completed product map, what things are produced in excess of our own needs? Show Boston, New York, Philadelphia, Chicago, New Orleans, San Francisco, Seattle as trade centers for the country as a whole. Why will a country have a large domestic commerce? Why will a country have a large foreign commerce? Which is larger, our domestic or our foreign commerce? Why is England's foreign commerce greater than ours? Why do not splendid harbors give good commerce to Greenland? Who trades most at other stores, the child whose father owns a large department store, or the child whose father owns a fine shoe store? Classify the important products under three heads: 1. Those of which we produce none, tea, coffee, rubber, etc. 2. Those of which we produce not enough as sugar, rice, cloth, etc. 3. Those of which we produce more than we need, grain, meat, cotton, etc. Which do we get from other countries? Which do we send out in exchange? Do we gain by producing too much of some things and exchanging for others? Compare recent conditions with colonial times, when each farm produced almost everything a family used.

Do not teach boundaries; do not teach capitals, unless important as trade centers. Children should be able to point, on outline map, to any State named by the teacher, or to name any State pointed to. Children should be able to locate any

State in its product region or regions, but should not learn list of exports and imports for each State. Point out that certain products, as hay, vegetables, dairy products, do not require special conditions of soil and climate and are so generally distributed that no special region is assigned to them.

Study United States by sections from pages 140 to 188. Fine print (except review questions) may be omitted or read only.

If time allows, read to the class in connection with the proper groups of States the following chapters from Chamberlain's *How We Are Fed*: Cheese, Fishing Industry, Oyster Farming, A Rice Field, How Sugar is Made (Cane Sugar, Beet Sugar, Maple Sugar), Salt, Cranberry Bog, Nutting, A Walnut Vacation.

In all the work from Introductory Geography, fine print, except review questions, may be omitted or used merely as reading matter.

Parallel reading for this grade will be found in *Our Own Country*. For method of this see Parallel Reading.

## B FIFTH GRADE.

Complete North America. *Introductory Geography*, pages 188 to 198.

Make product map of Canada, similar to the United States, indicating grain, livestock, lumber, coal and iron, fisheries, gold and any others teachers may desire. In similar manner make product map of Mexico.

Complete the *Introductory Geography*, giving special attention to South America and Europe, and to India, China and Japan in Asia. If time permits, Africa and Australia may be studied from the book or used only as reading matter.

### SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with North America. Cut the sand map, so that the profiles will show slopes. The teacher may draw elongated profiles on blackboard.

3. Tell facts about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on blackboard (*Grammar School Geography*, page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. (Afloat in the Forest contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make freehand sketch of South America, putting into each map, in addition to coast line, mountains and rivers, the Equator, Tropics, ocean currents and prevailing winds. Children draw not from book or wall map, but from teacher's drawing.

9. Make colored product map, showing forest products, grain, livestock, minerals, coffee, rice.

10. Difference between North and South America, in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Give briefly history of South America and compare with North America. Tell children of the early civilization of Ecuador and Peru.

11. Study specially Brazil, Argentina and Chile; the other countries may be passed over lightly.

12. From Chamberlain's *How We Are Fed* and *How We Are Clothed* read, as time permits, On a Coffee Plantation. A Cup of Cocoa, A Bunch of Bananas, Where the Mackintosh Grows. For Parallel Reading—Our American Neighbors.

#### EUROPE.

Study Europe after plan similar to that for South America. Children need not draw Europe. The teacher may omit the product map, although it is very useful. The general product map of Europe, page 120, and the rainfall maps, pages 26 and 114, of *Grammar School Geography* will be found useful.

The teacher should give briefly a bird's-eye-view of the great historical movements of Europe, from Egypt to Greece, Greece to Rome, Rome to the nations of modern Europe, from

Europe to America. As the more important nations are studied touch briefly upon their history and place in the world's progress. This work should be given orally and children not required to learn it, as its aim is simply to awaken historical interest. It should not take much time.

Study Europe in the text-book.

#### ASIA.

Treat Asia in similar manner, putting special stress on Physical Geography, India, China and Japan and Siberia. Other parts of Asia may be passed over lightly or omitted.

#### AFRICA AND AUSTRALIA.

If the work seems too crowded these two continents may be omitted, as they will be taken more fully in succeeding grades.

Fine print, except review questions, may be taken or omitted at the discretion of the teacher. Parallel Reading, *Our American Neighbors*, and *Modern Europe*. If time permits, read from Chamberlain's *How We Are Clothed*, Diamonds.

#### SIXTH YEAR.

The main work of this year will be the study of the United States in the *Grammar School Geography*.

The teacher should enlarge maps on pages 26 and 27, explain their meaning and keep them for reference with each continent studied.

#### NORTH AMERICA.

1. Locate North America on the globe with reference to Equator, Tropic and Arctic Circle.

2. Present N. A. in relief on the sand table and study mountains, valleys, slopes from the relief. Do not over-exaggerate relief. Draw elongated profiles of the relief.

3. Tell facts of ocean currents and winds pertaining to N. A. Do not explain winds and currents. Study from the map winds and ocean currents, pages 26 and 27.

4. Study rainfall map, page 46.

5. Compare winds and currents, rainfall map and relief map; where will there be most rivers? In what directions will they flow? Now look at wall map. Test conclusions.

6. The class is now ready for the general study of N. A., pages 45 to 49.

#### BROAD STUDY OF THE UNITED STATES.

Before studying our country in sections give a broad survey of it as a whole.

Then as each section is studied, its relations to other sections and to the whole will be clearly seen.

Continue to apply on a large scale the principle of division of labor. (See previous grades.)

From previous study review climate, drainage and soil of U. S., dividing it into natural regions.

Make product map of the U. S., using colored crayons. Give pictures of life and industry of each section. Show how each section is best suited to its product and how other things are obtained by exchange. Make distinction between raw material and manufactured goods. Show how power is obtained for manufacturing, largely now from steam and electricity instead of water power. What goods are shipped as raw material, and what as manufactured? Show necessity for trade centers in product regions. What advantage has each for transportation and manufacture? Which are chiefly manufacturing and which distributing points? Put into map on blackboard important railroad lines connecting trade centers. How connected by water? Why will a country have a large domestic commerce? Why will a country have a large foreign commerce? Which is larger, our domestic or our foreign commerce? Why is England's foreign commerce greater than ours? Why do not splendid harbors give good commerce to Greenland? Who trades most at other stores, the child whose father owns a large department store or the child whose father owns a fine shoe store? Classify the important products under three heads: 1. Those of which we produce none, as tea, coffee, rubber, etc. 2. Those of which we produce not enough, as sugar, rice, cloth, etc. 3. Those of which we produce more than we need, as grain, meat, cotton, etc. Which do we get from other countries? Which do we send out in exchange? Do we gain by producing too much of some things and exchanging for

others? Compare recent conditions with colonial times when each farm produced almost everything a family used.

In outline map, children should be able to point to any State named or name any State pointed to. They need not learn boundaries, need not learn capitals unless important as trade centers. They should be able to tell from memory in what product region or regions each State is located, but should not learn list of exports and imports for each State. Point out that certain products, as hay, vegetables, dairy products, do not require special conditions of soil and climate and are so generally distributed that no special region is assigned to them.

Children need not memorize figures or statistics regarding products. In the colored product map each product is indicated in the region in which it is dominant the color does not indicate that nothing else is produced within that region. Product regions often overlap.

The following colors are suggested for product maps; others may be adopted as needed: Cotton and rice, white; grains, yellow; grazing, light green; forest, dark brown; manufactures, light gray; coal and iron, black; other minerals, red brown; tobacco, sienna brown; fish and oysters, blue; wool, blue white; oranges, orange; other fruits, pink; dairy products, white streaked; petroleum, dark gray.

The class will now study from the book, pages 49 to 62.

This broad study from the product map of the U. S. *must* be made before States are studied in sections.

#### STATES BY GROUPS.

After this broader survey of the U. S., States may be taken by groups as presented in the book. As each group is studied its relation to the whole will be better seen. From the product map it will readily appear where New England secures its raw material for manufacture and where it finds its markets; where the Mississippi Valley sells its breadstuffs and meats and where it secures its manufactures. Keep these broader relations in mind, using details to impress general principles. Children may read all the text but should not commit it to memory. They should know how to use text and maps for reference in case of need. The fine print need not be learned; some minor details in the coarse print may be omitted. Take only the leading cities and occupations in each State or section. A few

examples will illustrate. The book describes thirty-eight cities in New England. Do not have all these learned. Instead impress upon the minds by parallel and supplementary reading a great trade center (Boston), a manufacturing city (Lowell), a lumbering city (Bangor), a fishing center (Gloucester). Vivid pictures of these will remain long after names are forgotten. Instead of memorizing what is said of the seven cities of Pennsylvania, give a few graphic word pictures of its coal and iron industries. No amount of hard work on the part of the teacher can make children remember long and dry statements of facts about seven cities of Illinois, but a good description of the great stock yards, a grain elevator and a wheat farm will make a lasting impression. In Texas omit less important cities and the minor occupations, but bring out strongly in the supplementary reading cotton raising, grazing and the great oil wells. In Colorado, gold mining, the great trade centers of that region and the clear, pure air are the important topics. In the State of Washington the child should have impressed upon his mind the magnificent forests and the rapid growth and outlook of the metropolis of Puget Sound.

### A SIXTH GRADE.

Take to Northern Section, page 66, preceded by brief review of California.

Teach Atlantic Plain, Appalachian Mountains, the Central Lowland, the Rocky Mountain Highland from relief map. The children need not learn the text in the book. Teach the Pacific Coast region from relief map and book. Study Production, page 57, in connection with the product map. Do not have children memorize mere facts.

Read to the class, if time permits, from Chamberlain's *How We Are Clothed*: Leather and Its Uses, A Spool of Thread, Needles, Pins, Sewing Machines, What the Buttons Told.

### B SIXTH GRADE.

Review globe study of Fifth Grade, taking any multiple of 5°.

Take to countries north of United States, page 93. Take broad view of the industries of the United States and of its domestic commerce. (See Supplement to the Geography, Maps II to XI.) Looking at the product map, what articles do we

produce in excess of home needs? Where do these find a market? What important articles do we not produce? From what countries are they imported? What great trade centers are built up by this foreign commerce? What are their special facilities for trade? The study of cargoes from the shipping news will be of great value in impressing our foreign commerce.

Parallel Reading for the Sixth Year will be found in Carpenter's North America and Tarr and McMurry's *Geography* Book II. Good supplementary reading is contained in *Our Own Country* and King's *Picturesque Geographical Readers*.

Read to the class, if time permits, from Chamberlain's *How We Are Clothed*: The Cotton Fields, Woolen Cloth and Clothing, The Work of the Silkworm, The Shoemaker's Story, How Hats Are Made, A Pair of Gloves, Gold.

## SEVENTH YEAR.

The work of this year will be the study of our American neighbors (Canada, Mexico and Central America, Cuba, South America), and Europe.

## A SEVENTH GRADE.

Follow the same general plan as used for United States for the study of other countries of North America.

Compare government of Canada with United States. Explain "local self-government." How does this keep Canada loyal? England learned the lesson of local self-government for her colonies by the American Revolution. What would the result have been had England granted local self-government to her thirteen colonies? Correlate with history. Present through talks and parallel reading. Do not give additional matter to be memorized.

In similar manner contrast government of Mexico with United States. The difference in success of the two republics is largely a difference of race. The life of President Diaz is full of thrilling incidents. If time permits, this would be an interesting subject for biographical composition. The mere telling of the story to the children will appeal strongly to the heroic in them.

Read pages 100a to 100d.

In taking up South America, follow the outline below.

## SOUTH AMERICA.

1. Present first on globe in relation to Equator, Tropics, to oceans and to other continents.

2. Show South America in relief on sand board. Have children study and describe its form and surface. Compare with North America. Cut the sand map so that the profiles will show slopes. Draw elongated profiles on blackboard.

3. *Tell facts* about heat, winds and ocean currents of South America. Do not explain.

4. Present wind, temperature and rainfall maps on blackboard (page 104).

5. Compare these with relief map.

6. Where would you expect most rivers, fewest rivers, longest and largest rivers, shortest rivers? Show wall map to confirm or correct opinions. Tell children about the size of the Amazon. ("Afloat in the Forest" contains good description.)

7. Result of physical conditions on soil and vegetation.

8. Train children to make free-hand sketch of South America, putting into each map, in addition to coast line, mountains and rivers, the Equator, Tropics, ocean currents, and prevailing winds. Children draw not from book or wall map but from teacher's drawing.

9. Make colored product map showing forest products, grain, livestock, minerals, coffee, rice.

10. Difference between North and South America in civilization and industrial prosperity is due in about equal proportions to physical features and to European settlers. Contrast the two continents in physical features. Study history of South America from a text-book. Supplement by outside reading. Compare with North America. Tell children of the early civilization of Ecuador and Peru.

Refer to Chamberlain's *How We Are Fed*; read, On a Coffee Plantation, A Cup of Cocoa, A Bunch of Bananas.

Compare product maps of North and South America. What things do we receive from South America? What do we send to South America? In what do we compete with Europe in South American markets? (Manufactures.) In what do we compete with South America in European markets? (Grain and grazing products.) How is this commerce carried on?

After this broad study of South America the class is ready for the text. This is to be used in the manner suggested for sixth year.

Bolivar is a striking figure in the history of South America. If time permits, study this character, contrasting with Washington.

#### EURASIA.

Find on the globe and note north and south, east and west extent. Study rainfall and temperature and ocean currents, but do not explain causes. Eurasia need not be modeled in sand, as children are now able to interpret map forms. Show a printed relief map (Frye's *Geography*) and be sure that children can interpret the physical map.

Be sure the children understand the meaning of maps on page 114. Teacher need not make colored product maps of Eurasia. Children can now interpret printed page without such aids.

Study Eurasia from the text, page 113-117.

Parallel Reading, *Our American Neighbors*, (borrow from 5th grade), *North America* (borrow from 6th grade), Tarr and McMurry's *Geog.*, Book III, and Carpenter's *South America*.

### B SEVENTH GRADE.

#### EUROPE.

Give as much attention to the history of Europe as time will permit. (See Fifth Grade.) The purpose is not to memorize facts of History, but to awaken historic interest. Many of the children will not attend high school, and so will miss systematic study of European history; but interest awakened in Geography may lead to subsequent reading. It may be possible here to awaken some interest in literature and art.

It is not necessary to make relief or product maps, though colored crayons might perhaps impress the products of certain sections. Products may be somewhat generalized as on page 120.

Tell the facts of prevailing winds, etc., and let children explain climate of different parts of Europe. Contrast with United States.

Study the text for Europe, using the fine print for reading matter, the large print for study and vivifying with concrete pictures and good descriptions from parallel and supplementary reading. Try to bring children into vital touch with life and conditions of the old world. The Minor Balkan States may be read, not studied.

Make clear the division of labor among communities according to natural resources or advantages, and the necessity of exchange resulting from such high specialization. Bring out European trade with North and South America. Contrast conditions of life in European countries with conditions in our own country. Contrast governments with government of the United States. In what respects is United States superior and to what does it owe its superiority?

Asia has been put into A Eighth Grade in order that much time may be given to Europe. Europe stands next in importance to North America.

## EIGHTH YEAR.

The work of this year will include a somewhat careful study of Asia, Africa, Australia, and the Islands of the Pacific; a study of California and its commercial relations; a brief survey of the commercial geography of the world, and of physical geography.

## A EIGHTH GRADE.

### ASIA.

Relief and product maps for Asia need not be made, though graphic illustrations with colored crayons may sometimes be useful. Make clear the facts of physical geography necessary to understand the climate of Asia. Give as much of the history of the great peoples of Asia as time will permit.

Use the large print for study, read the fine print. Read Afghanistan, Baluchistan, Persia, Indo-China, but do not learn.

Emphasize our commercial relations with China and Japan. Explain the "Eastern Question."

Parallel reading will be found in *Toward the Rising Sun*, *Under Sunny Skies*, *Northern Europe*, *Modern Europe*, (borrow from Fifth Grade), Carpenter's *Europe* and Carpenter's *Asia*.

## AFRICA.

Study wind, current and rainfall maps with reference to Africa. Compare rainfall map of Africa and South America. Explain the difference. Compare the Mississippi, the Amazon, and the Nile with reference to length, volume of water, tributaries. Give reasons. Compare North Central Africa, Mississippi Valley, Amazon Valley, with reference to rainfall, climate, vegetation, etc. Contrast Africa north of the Equator with Africa south of the Equator. Reasons.

Interest children in the ancient history of Egypt. Bring out recent modern progress in South Africa.

Give some account of great African explorers. From Africa's recent modern development judge of its future.

Parallel reading from Tarr and McMurry's *Geog.*, Book III, and Carpenter's *Africa*. Good supplementary reading will be found in Book VII of The World and Its People Series, *Views in Africa*.

## AUSTRALIA AND ISLANDS.

Make a careful study of Australia, its physical features, its climate, peculiar animals and plants, its industries, its history, people and government.

Contrast the constitution of Australia under its recent Federation (local self-government) with that of the United States.

Bring out the social and industrial conditions of New Zealand.

Bring out the rapid development of Australia and New Zealand and their rising importance.

Parallel Reading—Carpenter's *Australia* and Tarr and McMurry's *Geography*, Book III. *Australia* (The World and Its People Series) contains much interesting matter on the islands of the Pacific.

## CALIFORNIA.

Make a thorough study of California, giving special attention to its industries and commerce. Trace the products of California to the markets of the world. This pre-

pares for a general review of the industrial and commercial geography of the world. Enlarge this subject as much as time will permit. Show division of labor in its largest relations—what each nation does to meet the world's needs, and how these commodities are exchanged.

Use colored product maps of the world as far as possible, showing how success or failure in one part of the world affects other parts; how failure of wheat crop in Argentina raises price of wheat in United States. Refer to commercial maps in the appendix of Geography, Adam's *Commercial Geography* and Trotter's *Geography of Commerce*.

Fairbank's *California* contains much information in most convenient form. Take text on California in back of Geography omitting fine print at discretion of the teacher.

## B EIGHTH GRADE.

This term will be given to the study of Physical Geography. The children have learned many of the facts of Physical Geography, and have applied them in the study of the continents, but have not had explanations. Use the *Grammar School Geography*, pages as a text, referring, where fuller statements are needed, to Tarr's *Physical Geography*. This term's work will give a more complete view of the earth as a whole, and will constantly refresh in the minds of the children what they have learned in previous grades. It will lay a foundation for the sciences to follow in the High School.

Give simple problems in Longitude and Time in connection with globe study.



## INTRODUCTION TO HISTORY AND CIVICS.

## HISTORY.

**PURPOSE.**—The Course of Study in United States History has been outlined for the purpose of developing an interest in the history of human affairs, particularly as that history has developed on the American Continent. To this end an attempt will be made to give the children a knowledge of and a feeling for the personalities, events and movements of American History.

**METHOD.**—Upon the interests of children as we find them we must graft a more mature historical interest. Children are interested in biographical stories, consequently the work of the Fourth Grade, where History first appears as a regular subject, should be an introduction to history through its great men. In the Fifth Grade events and movements can be grouped around the lives and actions of historic personages, in the form of history story, and finally, beginning with the Sixth Grade, the larger movements and situations of history may be studied directly, the biographical and narrative elements still being used to vivify the facts learned.

**TEXT-BOOKS.**—No text-book will be used in the Fourth Grade. In the Fifth Grade *The Introductory History* (California State Series) will be used as a History Reader. In the Sixth, Seventh and Eighth Grades the children will use as a text in their own hands *The New Grammar School United States History* (California State Series). It is not intended that the text-book simply should be studied, but that the *subject* should be studied with the aid of the text-book.

**PARALLEL READING.**—Each class is supplied with books for Parallel Reading. The five books supplied are to be used by various groups of children in turn, the children reading aloud to the class, or reading and reporting to the class on the material assigned by the teacher. This material is to be treated the same as that obtained from the text or presented by the teacher, being discussed, explained, and, finally, reproduced in the *child's*

*own language.* The history material given in the Parallel Reading forms an excellent basis of fact and feeling for composition work. The *aims of history* rather than composition should be dominant in the treatment of the material during the history period. (See PARALLEL READING.)

SUPPLEMENTARY REFERENCES.—In the Fifth Grade, *Barnes' Elementary History of the U. S.*, and in the Sixth, Seventh and Eighth Grades, *Fiske's History of the United States*, *Gordy, History of the U. S. for Schools* and *Sheldon-Barnes' Studies in American History* may be used as supplementary text-books for reference.

The purpose of Parallel Reading and Supplementary References is not so much to add new facts of history, but rather to *give life and interest* to those contained in the text.

TRAINING TO STUDY.—History, because of the amount of reading done by the child, affords one of the best opportunities for teaching children to study. To study a subject means to discriminate between facts of greater and less importance and to relate these ideas to one another. Many lessons, particularly in the last three grades, should be given with open books or outlines, noting that the large or main topics are the epitomes of whole movements, and that the lesser or sub-topics are epitomes of lesser movements, which grouped together make up the larger movements or main topics. Children should be taught to find the main thoughts of the paragraphs they read, relating them to each other, finally reproducing in their own language. With open books study maps and pictures. Teachers should not be afraid to skip material in the texts when it is not pertinent to her purpose. Children should be taught to skip material. Good studying is as much leaving out material unrelated to the topic in hand as it is selection of points which bear directly on the subject studied.

TOPICS.—Certain parts of history are more important than other parts. Consequently some parts need to be studied, some *merely read*, and some *entirely omitted*. Large movements, and the causes and results of great events are most important, while the details of wars and battles and minor events are of least importance. Many military, political, legal and economic facts of history are too difficult for the comprehension of children. Where such is the case the children should merely read, the teacher summarizing for them at the close. The work of

the Sixth, Seventh and Eighth Grades is given under each grade by main and sub-topics, arranged with difficulties of the text-book and the above ideas in mind. These topics represent the central ideas to be understood and remembered, the details given in the text and other books are read only to make these central ideas clear. The details of battles, campaigns, wars and the details of most political, legal and financial measures being too difficult for the child to comprehend in their right relation and significance, should not be studied and memorized. Where these *facts as a whole* have an important bearing on history, the teacher should summarize their influence and present to the class.

In assigning a lesson make the assignment by a definite subject or topic, not by a certain number of pages. All reading or study, however broad, should be done to a point.

#### CIVICS.

**PURPOSE.**—The purpose of civics is to give the children definite and concrete ideas and standards of conduct controlling the social relations of men and women. Further, its purpose is to stimulate such observation and analysis of social situations that some heightened power to form independent personal opinions shall be given, a power which is demanded of every person by a democratic government and society. Civics, particularly in the Eighth Grade, is a splendid opportunity for applying to life situations much that has been learned in the various school subjects as they are seen in terms of human need. History and political ethics, geographic distribution and economic problems, physiology and public health have relations that need to be studied, not in the isolation of their special fields, but in their relationship to each other as they touch individual and social life. Civics is the one subject which gives a direct treatment of citizenship and its obligations, and it *ought to be* the crowning study of the public schools, which have been established primarily to perfect citizenship.

Do not neglect the great men who have contributed to human achievement outside of war and politics. Put emphasis upon such men as Columbus, Fulton, Whitney, Morse, Edison, Pasteur and others. In connection with our own State

speak of the work of the Franciscan Fathers, the early pioneers, Luther Burbank, and others.

THE MATERIALS FOR CIVICS.—Civics will find its materials wherever social institutions are discussed; in the business practices described in upper grade arithmetic, in political geography, in the applications of physiology and hygiene to the control of domestic, municipal, and national health; but pre-eminently in the situations of political and social history.

Civics is most closely related to history, and in the earlier grades should be taught in connection with that subject wherever the material permits. In the primary grades the concrete biographical material will appeal. Later the force of social principles, as supported by great men, will begin to appear. Finally in the more deliberate and formal treatment of the Eighth Grade the child should become conscious of the social institutions of which he is a member; he should know their contribution to his happiness and safety and welfare; and at last he should be made sensitive to his obligations and those opportunities which are afforded him at every instant of life to discharge his duties as a good citizen should.

TEXTS.—The history texts will give a large basis for a discussion of social questions. In the lower grades use as a supplementary text *Dole's American Citizen*. In the Eighth Grade, for the more formal study, use *Dunn's The Community and the Citizen*.

METHOD.—Avoid memorization of facts as facts. It is easy to create an interest in social affairs because their problems impinge on every life. Work largely by the method of observation, reading, inquiry and discussion. Avoid all partisan discussion, as for example in the study of the Civil War or in the treatment of more modern controversies. Try to create a strong feeling of admiration for well established principles of social conduct and strong attitudes of revulsion against those types of social misconduct about which there can be no question. Work particularly to fix admirable and desirable qualities of human character in the minds of children by showing how they have been present in the personalities of great human leaders such as Washington, Lincoln, and others.

## A FOURTH GRADE.

## HISTORY.

The hero tale and history tale have been used in the preceding grades as material for reading and oral language. History as a subject appears for the first time in this grade. The method of instruction is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The use of some simple historical reading is supplemental to the teacher's oral presentation. The work of this year offers two parallel approaches to the later study of history: *biographical history* and *local history*.

**BIOGRAPHICAL HISTORY.**—The biographical history will be covered by the stories from American colonial and pioneer life selected from the books here mentioned, or from such other material as the teacher may choose to use for her story telling. *Pratt's Stories of Colonial Children* and *Stories of American Pioneers* are to be used to supplement the oral presentation. These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

**LOCAL HISTORY.**—The local history to be studied is that of San Francisco and its immediate vicinity. It should be presented in close connection with the work in home geography. The children may read "The Story of San Francisco" in *Sexton's Stories of California*, pages 169-179. For further material the teacher may refer to *Wagner's Pacific History Stories*, *Hood's Tales of Discovery on the Pacific Slope*, *Powers' Historic Tales of the Old Missions*.

All schools should not study the same local history topics. The spots of historic interest are not equally known and available to the various children, nor are they equally significant in the history of San Francisco. Two lists of topics taken from *Mrs. O'Neal's Topics for Local History Work* are suggested. The first should be used by all schools. From the second, four or five particular topics should be selected by particular schools, as the material for study and observation is within reach of the school or of peculiar significance to that portion of the city.

## TOPICS FOR GENERAL USE.

1. Indians who once lived here, their former modes of life.
2. The Spaniards; where from and reasons for coming to this peninsula.
3. The Mission Dolores; location and description of church and cemetery.
4. Conditions (geographic, climatic) which made San Francisco a favorable place for settlement.
5. Houses of Spaniards; of what constructed, how built, and how covered.
6. Occupation of the people who came here first. Small settlements.
7. The Presidio; location and present use; meaning of word; how used by Spaniards.
8. The American settlement at Yerba Buena; location and occupation of the people.
9. Telegraph Hill, Russian Hill, Rincon Hill, and Bernal Heights; manner in which names were obtained and use in early days.

## TOPICS FOR SELECTION.

1. Portsmouth Square; a few of the historical scenes of which it was the center.
2. Meiggs' Wharf and Long Wharf; their importance in early days.
3. Mission Creek and Potrero; situation and use.
4. Location of first house built by an American (Captain Richardson); location of American settlement.
5. Population in 1842 (50) and in 1860 (50,000); cause of the rapid increase; the effect of the discovery of gold on the development of the city.
6. Streets named for pioneers; streets which have been built on land filled in and where the bay formerly came; change in the water front.

7. Old houses now standing that came around the Horn.

8. Opening of Market street; steam paddy; levelling of the sand hills; development of the Western Addition; horse cars, cable cars and electric cars.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

#### CIVICS.

Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men which have contributed to the country's welfare.

Bring to the attention of the children by talks and discussions some of the easily understood principles of government, such as

1. The meaning of the word "government" and the necessity for some form of it.
2. The family and its government.
3. The schoolroom and its government.
4. The playground and its government.

See Dole, *The American Citizen*, Chapters I, II, III.

### B FOURTH GRADE.

#### HISTORY.

The method of history instruction in this grade is largely that of oral presentation by the teacher and oral reproduction by the pupil, with discussion of the situations involved in the story. The reading of simple historical stories by the children is supplemental to the teacher's oral presentation. The work of this grade continues with two parallel approaches to the later study of history: *biographical history* and *local history*.

BIOGRAPHICAL HISTORY.—The biographical history will be covered by the stories from American colonial and pioneer life

selected from the books here mentioned or from such other material as the teacher may choose to use for her story telling. *Eggleston's Stories of Great Americans for Little Americans* and *Eggleston's Stories of American Life and Adventure* are to be used to supplement the oral presentation. These stories may be read aloud to the class by various children, or read by groups of children and told by them to the class. Reproduction and discussion should follow.

LOCAL HISTORY.—The local history to be studied is that of California, with such Pacific Slope history as is necessary to give a proper setting. It should be presented in close connection with the study of the geography of the State. The children should read *Sexton's Stories of California*. This may be done, as with the biographical history, by allowing a group of children to read a single story, presenting it to the class. The teacher will find further material for her own presentation in *Winterburn's The Spanish in the Southwest*, *Wagner's Pacific History Stories*, and *Powers' Historic Tales of the Old Missions*.

The following topics are suggested and should be among those receiving attention:

1. Voyages of Balboa, Magellan and Drake.
2. Cabrillo's discoveries along the Pacific Coast.
3. The discovery of San Francisco Bay.
4. The Indians of California; their former modes of life.
5. The founding of the Missions. (Indicate location on an outline, sandboard or wall map, and on the map of the *State Elementary Geography*, page 28. Use pictures of a few Missions.)
6. The Mission Indians; manner of living; treatment by the Spanish.
7. Towns founded by the Spanish about the Missions; mode of life among the early Spanish families.
8. How California became a part of the United States; capture of Monterey and San Francisco.
9. Occupation of Americans who came before 1848; trade in hides, tallow, etc.
10. Discovery of gold; mining excitement; ships to San Francisco and rush to the mines; rapid growth of the city; mixed population; lawlessness; vigilance committees.

11. The Donner party as typical of crossing the plains.
12. Other ways of coming to California in the early days.
13. The opening of the first transcontinental railway.
14. The change from a mining to an agricultural State.

HOLIDAYS.—Continue the observance, in some simple manner, of such days as Thanksgiving, Christmas, Washington's Birthday, Lincoln's Birthday, Decoration Day and Admission Day.

#### CIVICS.

Wherever the history material permits, emphasize the personal qualities manifested in the lives of great men, which have contributed to the country's welfare.

Continue the talks and discussions on some of the easily understood principles of government, such as—

1. The idea of a city and its government.
2. The idea of a state and its government.
3. The idea of the government of our country.
4. Titles and names of the chief officer in each of the three.

Correlate with geography. Consult *Dole's The American Citizen* for ideas as to this work.

### A FIFTH GRADE.

#### HISTORY.

In the preceding grades the work has been largely biographical.

In this grade the work is to take on a larger range of facts and events. The biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than before. The *Introductory History* (California State Series) is to be bought and used through the story of Washington, page 186. The book should be used as a

reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text, though pupils should be able to reproduce, orally, the substance of the stories. The work of the teacher should be to bring out and reinforce the pictures drawn, so as to enrich the mind of the child. *Barnes' Elementary History of the U. S.* may be used as a supplementary text.

*Moore's Pilgrims and Puritans* is to be read by the children as parallel reading. Have four or five children read a story in Moore and then tell it to the class, or have each one of a group read part of the story aloud to the class. The teacher may supplement orally from any other material she may choose.

Correlate the history work with that of geography by looking up the localities mentioned.

#### CIVICS.

Wherever possible, get a standard and ideal of conduct from the life of the great Americans treated in the history reader, such as William Penn, Benjamin Franklin and George Washington.

Discuss the necessity of government in connection with the story of John Smith, the Landing of the Pilgrims, and others. In connection with the colonies, discuss, in simple terms, local government as found in the colonies, and centralized government as found in the King and Parliament.

### B FIFTH GRADE.

#### HISTORY.

In the history work of this grade the biographical element is still prominent, but woven about the story of the hero is the story of the hero's part in American History. The event should be brought into greater prominence than in the Fourth Grade. The *Introductory History* (California State Series) is to be bought and completed from page 187. The book should be used as a reader more than as a history text. There should be no assignment of lessons to be learned and recited by memorizing from the text. The work of the teacher should be to bring out

and reinforce the pictures drawn, so as to enrich the mind of the child.

The amount of oral presentation of history stories by the teacher, the characteristic method of the Fourth Grade, is much lessened in this grade, and the amount of parallel reading is increased. *Moore's From Colony to Commonwealth* and *Blaisdell & Ball's Hero Stories from American History* are to be read by the children as parallel reading. The stories in these books may be read aloud, or read and told to the class, by various groups of children.

Correlate the history work with that of geography by looking up the localities mentioned.

#### CIVICS.

Wherever possible, get a standard and ideal of conduct from the lives of great Americans treated in the history reader, such as George Washington, Daniel Boone, Andrew Jackson and Abraham Lincoln.

In connection with the chapter on the Revolution, discuss the following topics in simple form:

1. Who makes the laws and by what right?
2. The right of the King and Parliament to govern America.
3. The state governments of the free colonies and why they joined in a national government.

### A SIXTH GRADE.

#### HISTORY.

With this grade a more systematic study of American History begins. In the previous grades the biographical element was dominant. Now the larger movements of history are studied directly as such, though biographical and narrative material are still to be used to make the material studied real and interesting.

The work of this grade will cover the following movements or large topics:

- I. Europe finds America.
- II. Spain takes Possession of the New World.
- III. England rivals Spain and plants herself on the Atlantic Coast.
- IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi.
- V. The Struggle between the English and the French.

The *New Grammar School U. S. History* (California State Series) is used for the first time in this grade. The topics cover the first ninety-two pages. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use *Hart's Colonial Children*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of story.

*Gordy, History of the U. S., Fiske's History of the United States, Sheldon-Barnes' Studies in American History, and Hittell-Faulkner's Brief History of California* may be used as supplementary text-books for reference.

*Lawler, The Story of Columbus and Magellan, and Shaw's Discoverers and Explorers* can be used to good effect in making the transition from the narrative history of the Fifth Grade to the closer study of historic movements in the upper grades.

The reference numbers are to pages.

The following are the topics for this grade:

- I. Europe finds America (Gordy, 1-12), (Fiske, 19-37), (Sh.-Brns., 19-31), Hittell, 1-4.)

1. The problem of the Trade Route to the Indies (2, 3).
2. Columbus sails West to reach the East and finds America (4).
3. The Cabots follow Columbus for the English (5).
4. Vasco da Gama goes around Africa to India (5).
5. Amerigo Vespucci gives his name to America (6).
6. Balboa discovers the Pacific Ocean (7).
7. Magellan's ships sail around the World (8, 9).

- II. Spain takes Possession of the New World (Gordy, 13, 19), (Fiske, 40-46), Sh.-Brns., 31-41), (Hittell, 5-31, 45-67).
1. Cortes conquers Mexico (11).
  2. De Vaca leads Narvaez's Men across the Continent (11).
  3. Fray Marcos and Coronado seek the Seven Cities of Cibola (12).
  4. De Soto leads the Spaniards across the Mississippi (13).
  5. The Spanish establish Missions and Colonies (13, 14).
- III. England rivals Spain and plants herself on the Atlantic Coast (Gordy, 20-74), (Fiske, 59-152), (Sh.-Brns., 41-45, 57-61, 65-73, 77-87, 92-100), (Hittell, 32-44).
1. Sir Francis Drake sails up the Pacific Coast (15).
  2. Sir Walter Raleigh and others try to colonize America (16-18).
  3. The English start a Colony in Virginia (19-24).
  4. The Dutch and Swedes plant Colonies that interfere with England's control (27-29).
    5. The Planting of New England.
      - a. Plymouth (30-34).
      - b. Massachusetts Bay (35-38).
      - c. New Hampshire and Maine. (39).
      - d. Rhode Island (40, 41).
      - e. Connecticut (42).
      - f. New Haven (43).
      - g. The United Colonies of New England (44, 45).
  6. England extends her Colonies at the South.
    - a. Maryland (25, 26).
    - b. The Carolinas (47).
  7. England unites her Colonies by annexing the New Netherlands (48).
  8. English colonization continues.
    - a. New Jersey (49).
    - b. Pennsylvania (50).
    - c. Delaware (51).
    - d. Georgia (52).
  9. The Thirteen English Colonies (53).

- IV. France, the Third Rival, takes Control of the St. Lawrence and the Mississippi (Gordy, 87-92), (Fiske, 50-55), (Sh.-Brns., 62-64, 74-77, 87-91).
1. Cartier explores the St. Lawrence River (54).
  2. Champlain makes the First Settlement (54).
  3. Marquette and Joliet add more Territory to New France (55).
  4. La Salle adds Louisiana (56).
- V. The Struggle between the English and the French (Gordy, 93-104), (Fiske, 155-176), (Sh.-Brns., 101-113).
- (Merely read the description of the Indians, 57-62).
1. How the French got along with the Indians (63-64).
  2. How the English got along with the Indians (65-70).
  3. First conflicts between the English and the French along the Border (71-73).
  4. The French tighten their Hold on the Mississippi and Ohio Valleys (74, 76, 77).
  5. The Men of New England Capture Louisburg (75).
  6. Washington's First Public Service (78, 80, 82).
  7. Braddock Meets Defeat at Fort Duquesne (83-86).
  8. Wolfe Defeats Montcalm at Quebec (87-89).
  9. France is Driven Out of America (90).

#### CIVICS.

History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

The devotion of Columbus to a scientific idea.

The missionary work of the Spanish priests among the Indians.

The religious devotion of the Pilgrims.

The religious tolerance of Roger Williams.

The treatment of the Indians by the French and English.

The employment of savages in civilized warfare.

The various forms of government represented in the colonies and the mother countries might be brought out, discussing particularly the monarchical form of government.

## B SIXTH GRADE.

### HISTORY.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics.

VI. The Disagreement of the English Colonies with the Mother Country.

VII. The Struggle for Independence.

VIII. The Struggle for a Government.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from page 93 to page 205. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use *Hart's Camps and Firesides of the Revolution*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

*Gordy, History of the U. S.*, *Fiske's History of the U. S.* and *Sheldon-Barnes' Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

VI. The Disagreement of the English Colonies with the Mother Country (Gordy, 105-118), (Fiske, 181-203,) (Sh.-Brns., 125-147).

(Merely read the description of "Life in the Colonies," 91-100).

1. How the Mother Country Governed the Colonies (101-103).
2. The Acts of Trade and Navigation (104).
3. The Quartering of Troops and Trial without Jury (107-108).
4. The Stamp Act (109-119).
5. The Tax on Tea (120-124).
6. Parliament Punishes Massachusetts (125).
7. The Colonies Protest in Continental Congress (126-128).

VII. The Struggle for Independence (Gordy, 125-184), (Fiske, 203-241), (Sh.-Brns., 148-189).

1. The First Resistance: Concord and Lexington (129, 130).
2. The Battle of Bunker Hill (133).
3. Washington takes Command of the Army (131, 132, 134-136).
4. The Declaration of Independence (137, 138).
5. The Struggle for Possession of the Center.
  - a. The Retreat of Washington (139-142).
  - b. The Campaign and Surrender of Burgoyne (143-145).
6. The Gloomiest Period of the War.
  - a. The Winter at Valley Forge (146).
  - b. The Treason of Arnold (154).
7. Events which encouraged the Americans.
  - a. Franklin gets France to help America (147).
  - b. The Victories of Paul Jones (158, 159).
8. George Rogers Clark saves the Northwest (151).
9. The War at the South ends in the Surrender of Cornwallis (153, 155-157, 160-162).

(Topics 5, 6, 7, 8, 9 should be merely read by the children, the teacher summarizing the result of the various campaigns and events at the proper places).

VIII. The Struggle for a Government (Gordy, 185-193), (Fiske, 246-256), (Sh.-Brns., 196-215).

Merely read Chapter XIV, Our Country in 1790 (185-208), as supplementary to the study of the following topics:

1. The Colonies become States (163).
2. The Weakness of the Articles of Confederation (164, 165, 169-173).
3. Making the Constitution (174-181).
4. Organizing the New Government (182-184, 209-212).
5. Paying its Debts (213-224).
6. Enforcing its Authority (226).
7. The Rise of Political Parties (225).

#### CIVICS.

History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

The patient resistance of the colonists to the mother country.

The difference between the democratic and monarchical forms of government as brought out in the assemblies of the colonists and the imposed rule of Royal governors should be explained. The resistance of the colonists is to be explained on the basis of Englishmen fighting for acknowledged English rights.

The patient endurance of Washington at Valley Forge.

The treason of Arnold at West Point.

The evil effects of partisanship in Congress.

The sacrifice of special interest to general good in the Constitutional Convention.

#### A SEVENTH GRADE.

##### HISTORY.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the following movements or large topics:

IX. The Struggle for Commercial Independence.

X. The Nation grows toward the West.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 206 to p. 293. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use *Hart's How Our Grandfathers Lived*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

*Gordy, History of the U. S., Fiske's History of the U. S.* and *Sheldon-Barnes' Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

IX. The Struggle for Commercial Independence. (Gordy 194-249). (Fiske, 261-301), (Sh.-Brns., 229-236).

(Merely read Chapter XIX, "Progress of Our Country Between 1790 and 1815," as supplementary to the study of the following topics):

1. Washington keeps the Nation Neutral in the Troubles between France and England (227-231).
2. Adams and the Trouble with France (234-238).
3. Jefferson and the Republican Reforms (241-243).
4. France and Great Britain try to punish each other at America's Expense (250-254, 256).
5. Jefferson's Policy of Protecting American Interests (255, 257-267).
6. The Second War with England (263-272).

• (Children merely read, teacher summarizing.)

X. The Nation grows toward the West (Gordy, 250-266), (Fiske, 309-342), (Sh.-Brns., 215-220, 225-229, 245-254).

1. The Purchase of Louisiana (244, 245).
2. Lewis and Clark explore the Northwest (244-247, 249).
3. Pike explores the Southwest (248).

4. The Three Streams of Westward Emigration (273, 274).
5. The Resistance of the Indians (275, 276, 279).
6. The Settlement of Disputes with our Western Neighbors (291-300).
  - a. The Boundary Disputes.
  - b. The Monroe Doctrine.
7. The Rising West (301-311).

(Merely read this chapter here, as its important parts will be studied later.)

8. The Highways of Trade and Commerce (312-324).

(Merely read as supplementary to above topics).

#### CIVICS.

History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Jefferson declines a third term on principle.

The trickery of Napoleon.

The nation refuses to be coerced into paying tribute to the French Directory.

In connection with the discussion of maritime and commercial rights involved in the struggle for commercial independence, speak of international law, the law of nations, its function and development. (See *Dole, The American Citizen*, Chapters XLII, XLIII.)

### B SEVENTH GRADE.

#### HISTORY.

Continue the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. The work of this grade will cover the large topic.

## XI. The Long Struggle with Slavery.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics cover from p. 294 to p. 418. The numbers in parenthesis refer to the sections in the State History.

For parallel reading this grade will use *Hart's Romance of the Civil War*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

*Gordy, History of the U. S., Fiske's History of the U. S.* and *Sheldon-Barnes' Studies in American History* may be used as supplementary text-books for reference. The reference numbers are to pages.

The following are the topics for this grade:

- XI. The Long Struggle with Slavery (Gordy, 267-355), (Fiske, 349-429), (Sh.-Brns., 237-244, 256-370.)
1. The Establishment of Slavery in America (23).
  2. Slavery in the Colonies (93, 94).
  3. Slavery at the Time of the Constitution (168, 177, 195).
  4. Invention of the Cotton Gin firmly establishes Slavery (208).
- (Topics 1, 2, 3, 4 are reviewed here to properly introduce the slavery question.)
5. The Settling of Western Lands Brings a Struggle over Slavery (307-309).
  6. The Missouri Compromise (310, 311).
  7. Industrial Changes make the North and South hold Differing Opinions on Internal Improvements, Tariff and Slavery (328, 333).
  8. Jackson Denies a State's Right to Nullify (334-336).
  9. The National Anti-Slavery Movement Begins (348-351).
- (Certain portions of Chapter XXIII have been omitted from this outline for study, as they are too difficult. If the teacher desires, they may be read at this or some other convenient point and summarized by the teacher).
- (Chapter XXVI may be read, not studied, as descriptive material which shows the widening industrial gap between the North and South.)

10. The Acquisition of New Territory again raises the Question of the Extension of Slavery.
  - a. Texas secures Independence and comes into the Union (356, 357, 361).
  - b. Oregon becomes a Territory (358-360, 362).
  - c. The Mexican War adds New Mexico and Upper California (363-372).
11. The Political Parties try to Dodge Slave Extension as an Issue (373-376).
12. The Discovery of Gold in California forces the Question of Slavery on Congress (377, 378).
13. The Compromise of 1850 (379-383).
14. The Territory of Nebraska again opens the Slavery Question (384-386).
15. The Struggle to make Kansas Free or Slave (387-389, 397).
16. The Slavery Question breaks up Old Party Lines (390-394, 400, 401).
17. The Supreme Court deals with the Slave Question (395, 396).
18. The Lincoln-Douglas Debates (398).
19. John Brown's Raid into Virginia (399).
20. Abraham Lincoln is elected President: His Policy (402, 424).
21. Why the States Seceded (419-421).
22. The Final Attempts at Compromise (422, 423).
23. The War for the Union, 1861-1865.
  - a. The War on the Land (425-452).
  - b. War along the Coast and on the Sea (453-463).(Children merely read the material on the campaigns of the Civil War, the teacher summarizing at the proper points.)

#### CIVICS.

History gives the personalities and situations which constitute the embodiment of the best civic principle. Wherever the material gives a situation where some individual has performed or failed to perform his noblest part to the advantage or disadvantage of his country and his fellow men, the civic principle involved should be pointed out and discussed.

In this grade the following situations are suggested as examples:

Clay, the great compromiser, meets both sides half way.

Jackson takes a firm stand on nullification.

John Brown's raid into Virginia.

Under the question of the secession of the Southern States discuss the relation of States to the central government. Treat the function of State government. (See Dole—*The American Citizen*, Chaps. XI, XII.)

## A EIGHTH GRADE.

### HISTORY.

Complete the more systematic study of American History, studying the larger movements directly as such by the topical method, using biographical and narrative material as supplementary. Bring the history down to date so that the children face our modern political and social problems preparatory to a study of them in civics. The work of this grade will cover the following movements or large topics:

XII. The Legacy of the Civil War.

XIII. Our Development since the Civil War.

XIV. Our recent Foreign Relations.

XV. Our Affairs at Home.

Under XV teach any important current events occurring since the publication of the text.

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. Roughly, the topics will cover from p. 419 to the end of the book. The numbers in parenthesis refer to the sections in the State History

For parallel reading this grade will use *Mowry's American Inventions and Inventors*. Teacher will assign stories to be read by various groups of children, who will read them aloud to the class or tell them. Follow with discussion and reproduction of the story.

*Gordy, History of the U. S.*, *Fiske's History of the U. S.* and *Sheldon-Barnes' Studies in American History* may be used as supplementary text-books for reference in general American History.

The following are the topics for this grade:

XII. The Legacy of the Civil War. (Gordy, 356-364), (Fiske, 441-448), (376-384).

1. The Cost of the War (464-476).  
(Merely read, teacher summarizing.)
2. The Reconstruction of the South (477-484, 494-495).  
(Merely read, teacher summarizing.)
3. The National Finances (496-499).
4. The Right of the Negro to Vote (500-502).
5. The French in Mexico: The Monroe Doctrine (517).
6. The Alabama Claims (518).

XIII. Our Development since the Civil War. (Gordy, 365-409), (Fiske, 448-471), (Sh.-Brns., 385-403).

1. The New West (488-493).
2. The Passing of Old Political Issues: The New Issues (503-516).
3. The Purchase of Alaska (519).
4. The Rise of New Industries in the North and South (520-522).
5. The Growth of the New Northwest 523-528).
6. Our Mechanical and Industrial Progress (529-535).
7. Politics since 1880 (536-561).

XIV. Our Recent Foreign Relations. (Gordy, 410-424), (Fiske, 471-477).

1. The Hawaiian Revolution (562).
2. The Venezuelan Boundary Dispute (563).
3. The Cuban Question (564-567).
4. The War with Spain (568-575).
5. Disorders in China (576).

XV. Our Affairs at Home. (Gordy, 425-436).

1. The Money Question (577-579).
2. The Assassination of President McKinley (580).
3. President Roosevelt's Administration (581).
4. The Isthmian Canal (582).

CIVICS.

In this grade Civics appears as a subject separate from history. Foundation has been laid by the constant discussion of civic matters in connection with the study of history and the use of *Dole's The American Citizen*. It is the purpose of the civics of this grade to make a direct study of the relations of the individual to the social institutions of which he is a member.

No special text will be purchased by the children, but the

teacher will follow the treatment given in *Dunn's The Community and the Citizen*. Observation, inquiry and reading outside the recitation and discussion of topics in the class exercise will be the method of instruction. Try to have the children get their information in the way they will be compelled to get it in after life. Stimulate free investigation and discussion, in a spirit of absolute fairness. Use the question for investigation at the end of each chapter in Dunn. Work for a devotion to right ideals and a proper attitude of mind rather than a mere command of facts.

In this grade the following topics should be covered:

- I. The Beginning of a Community (Dunn, 1-6).
- II. What is a Community? (Dunn, 7-9).
- III. The Site of the Community. (Dunn, 10-14).
- IV. What the People in Communities are Seeking (Dunn, 15-19).  
(In connection with the first four topics discuss the founding and history of San Francisco, showing the geographic reasons for its permanence and its world-importance as a great community.)
- V. The Family. (Dunn, 20-25).
- VI. Some Services rendered to the community by the family. (Dunn, 26-33).
- VII. The making of Americans. (Dunn, 34-42).
- VIII. How the relations between the people and the land are made permanent and definite. (Dunn, 43-53).
- IX. How the community aids the citizen to satisfy his desire for health. (Dunn, 54-66).
- X. How the community aids the citizen to protect his life and property. (Dunn, 67-81).

## B EIGHTH GRADE.

### HISTORY.

It is assumed that the systematic study of American history has been completed in the A Eighth Grade, so that the main attention of this grade may be given to Civics as a special study. The history work of this grade, confined to about one

thirty-minute period a week will be confined to the history of California:

- XVI. The History of California (State, Supplement pp. 1-18), (Hittell, 1-67).

(Follow the topics given in the State Series supplement on the History of California.)

The *New Grammar School History* (California State Series) is to be used as a text in the hands of the children. The topic covers the supplement. Pp. 1-18. *Hittell-Faulkner's Brief History of California* may be used as a supplementary text-book.

In teaching the history of this State show the relationship of the history of California with general American history.

#### CIVICS.

Below the Eighth Grade civics has been treated along with history. In the A Eighth Grade civics has been introduced as a special subject, stress being laid upon the transition between history and civics, by a treatment of the origin and development of communities with the causes. The nature of the family and the community in their protective functions has been studied. In the B Eighth Grade the more complex factors are studied.

The method of study is the same, however. Try to stimulate the children into taking a deep interest in community life. Have them investigate various topics by observation, inquiry and reading. Then let their reports be a basis for a free and fair class discussion. Try to make the children conscious of what the community has done and is doing for them, and try to make them sensitive to their obligations. Stimulate the spirit of inquiry and analysis from the facts, and encourage the forming of intelligent personal opinions. Work for a proper attitude of mind rather than a mere command of facts.

No special text will be purchased by the children, but the teacher will follow the treatment given in *Dunn's The Community and the Citizen*.

In this grade the following topics should be covered:

- XI. The relation between the citizen and the community in business life (Dunn, 82-91).
- XII. How the Government aids the citizen in his business life (Dunn, 92-97).

- XIII. Waste and saving (Dunn, 98-102).
- XIV. How the community aids the citizen in transportation and communication (Dunn, 103-117).
- XV. How the community aids the citizen to satisfy his desire for knowledge (Dunn, 118-131).
- XVI. How the community aids the citizen to satisfy his desire for beautiful surroundings (Dunn, 132-148).
- XVII. How the community aids the citizen to satisfy his religious desire (Dunn, 149-152).
- XVIII. What the community does for those who cannot contribute to its progress (Dunn, 153-160).
- XIX. How the citizens of a community govern themselves (Dunn, 161-177).
- XX. Some defects in the self-government of our communities (Dunn, 178-188).
- XXI. The government of rural communities: Township and County (Dunn, 189-197).
- XXII. The government of the City (Dunn, 198-207)
- XXIII. The government of the State (Dunn, 208-217).
- XXIV. The government of the Nation (Dunn, 218-227).
- XXV. How the expenses of government are met (Dunn, 228-238).

Children are not required to purchase *Dunn's The Community and the Citizen*, but may be encouraged to do so; it is a good book for the child to own, and a good book to have in the home.

## INTRODUCTION TO NATURE STUDY.

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INCLUDING MANUAL TRAINING, PHYSIOLOGY  
AND HYGIENE.

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### GENERAL SUGGESTIONS.

Nature Study trains all the senses. It quickens sense perception. It interests the child in the forces and objects of nature about him. It gives an elementary knowledge of common things.

"Object Lessons," and "Nature Study" have been good, but it is time for the next step in advance. *Naturalize the entire Course of Study.* Make the work concrete. This is real nature study.

We have done much in this direction already. Manual Training, Cooking, Drawing, Music, Physical Culture are Nature Study for they quicken the child's senses, exercise his judgment and promote physical development.

In Manual Training children should learn more than the handling of tools. Wood should be known by smell, taste, color. They should test the qualities which adapt them to their various uses. They should know the source of the various lumbers in the markets and the use of each in the construction of a building. They should be encouraged to observe building operations, and to note the kinds of machinery and tools used. They should be able to read simple plans. Manual Training should shorten any subsequent apprenticeship and not be the source of bad habits subsequently to be corrected.

Cooking offers the opportunity for teaching much elementary science, qualities of food articles, hygienic qualities of various foods. Children should be taught the economic use of fuel in cooking and the economy of time in the preparation of a meal. Sight, taste, smell and feeling may be trained in marketing. Children should often be given articles a little tainted to pass judgment upon them. The danger of ptomaine poisoning from tainted foods should be pointed out. Not

enough sense training of this kind is given and yet what Nature Study is of greater value than that which trains the nose to detect slightly tainted meat, fish or oysters?

Drawing and Music train ear and eye. Children should be taught to appreciate far beyond their power to perform. Occasionally good singers or players should be invited to the school to entertain the children with classical music. In every community there are numbers of people who will be glad thus to share in the education of the young. Fine works of art should be placed before the class not for critical study but for sympathetic appreciation and enjoyment. One or two pictures brought before a class at a time are better than a whole gallery, for many things tend only to confuse. Children may be taken to the art gallery or museum for the study of a limited number of things each time.

Flowers, birds, trees, etc., are studies as a basis for drawing and composition. Children should be encouraged to see good proportions in buildings, to observe beauty in all common things—trees, sky, clouds, water, sunset. The beauty of nature is not less important than its truth.

Physical Culture and supervised play in the public playground or the school yard give hard muscles, rosy cheeks and quickened judgment.

Geographical excursions offer some of the best sense training, and the Museum of Geography will give the best means of handling things. (See Geography.)

### THE SCHOOL GARDEN.

The school garden offers the most profitable work in Nature Study. Most of our city children know the common fruits and vegetables only as they appear in the markets or on the dinner table. Many of the most important farm products are but words which they see on the pages of the History and Geography. The school garden should contain the most common vegetables. A small patch of wheat in the school garden may be the only wheat the child has seen; but this small patch, enlarged by the imagination and supplemented by pictures and descriptive matter, may expand into the grain fields of the San Joaquin, the Mississippi, or of Alberta.

Many of our school buildings have little available ground, but this is no excuse for wasting a square inch. A

stalk of corn may be grown in a flower pot, or a hill of potatoes in a vegetable box. By making the most use of what we have we get more. There is no school but can do something in raising the most common food plants.

The chief value of the school garden is the means of instruction for the home garden. Children should be encouraged to cultivate plants in their homes—have them report from time to time what plants they are raising and how they are doing. Home-grown vegetables may be brought to school for illustration. Try to awaken an interest in the parents in the home garden. The girls will be as much interested as the boys. Give instruction in cultivation of the most common flowering plants. A very small piece of ground carefully cultivated will keep a few flowers on the parlor or dining room table. The vegetables from the home and the school garden give good material for Nature Study, drawing, home and school room decoration. The love of gardening implanted in the boy or girl may give to the man or woman many hours of pleasant and profitable leisure—leisure that might otherwise be ill-spent.

*Prof. Wickson's Vegetables of California* is an exceedingly valuable book and a most useful guide for teachers or children.

We have endeavored to make every part of this course concrete and practical. Reading is taught from beginning to end for thought content. Geography begins with observation and follows lines of children's interest. Arithmetic deals with real measurements and with life conditions and problems. History is enriched by parallel and supplemental reading. In Language the child is trained to think and helped to a better expression of his thought. If all these are carried out in the right spirit, the Course of Study will be naturalized and Nature Study will form part of every subject.

For schools that can do more work than is indicated above, we give a list of references where material and method of treatment may be found. While this work is left optional, we trust that each school will be able to do some work and correlate it with other work in the course of study. Each school should select its nature work according to its environment. Schools near the Park will find much material ready at hand, those near salt water will find a different material.

## REFERENCE BOOKS.

- Seed Babies, Ginn & Co.  
A Few Familiar Flowers, Heath.  
Lessons with Plants, Bailey.  
How We are Fed, Chamberlain.  
How We are Clothed, Chamberlain.  
How We are Sheltered, Chamberlain.  
Experiments with Plants, Osterhout.  
The Soil, King.  
Home Geography, Fairbanks.  
Lessons in Nature Study, Jenkins & Kellogg.  
Insect Life, Comstock.  
Aquatic Insects, Miall.  
Outdoor Studies, Needham.  
Shells and Sea Life, Josiah Keep.  
West American Shells, Keep.  
Habits of California Plants, Chandler.  
Mountains of California (chapter on Trees), John Muir.  
Wild Flowers of California, Parsons and Buck.  
U. C. Nature Study Bulletin No. 1.  
Butterflies, Scudder.  
How to know Butterflies, Comstock.  
Nature Study, Jackman.  
Nature Study and Life, Hodge.

## INTRODUCTION TO PHYSIOLOGY AND HYGIENE.

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PURPOSE.—The teacher should try to convey to the child the fundamental nature of physical health to the person and the community, giving only such facts as bear a direct relation to some daily need for physical care. Physiology and hygiene should be taught as a practical subject, with little regard for facts of anatomy and physiology which have no very direct and tangible relationship to health. Do not hesitate to skip facts of this sort when they appear in the texts.

Avoid making a grind of this subject. Much assigned reading and long memorization of facts defeat the purpose of the study. Teach primarily through interest. There is no subject where interest as a factor in learning is more important than here, and the opportunities for its use are large. Reading aloud by the teacher, reports by the children, with general and informal class discussion, is a most valuable method here.

Emphasize the social or community aspect of health as well as the personal side from the very beginning. Such a book as *Town and City*, Vol. III, Gulick's Hygiene Series, is most valuable for the community view of health.

Use such material as you can find in the *New California State Series Physiology and Hygiene*. The Gulick Hygiene Series will be most helpful. Other volumes which may be used by the teacher are: Albert F. Blaisdell, *How to Keep Well*, and *Our Bodies and How We Live*.

## OUTLINE IN PHYSIOLOGY AND HYGIENE.

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### PRIMARY GRADES.

In primary grades give talks on cleanliness and the importance of proper carriage of the body—sitting, standing and walking.

Talks on how to keep healthy, impressing upon children the importance of breathing pure air, of eating wholesome food, and exercising in the open air.

Try to see that children learn how to play, and encourage them to take an active interest in games.

Emphasize strongly that hygiene is more than personal; it is social.

Books for teacher's desk: *How to keep Well*, by Albert F. Blaisdell, M. D., *Cal. State Series Physiology and Hygiene*, *Gulick Hygiene Series, I, Good Health*.

### FIFTH GRADES.

Foods; why necessary, kinds, quantity, cooking, chewing, etc.

Organs and processes of digestion, with effects thereon of stimulants and narcotics.

Books for teacher's desk: *Our Bodies and How We Live*, by Albert F. Blaisdell, M. D., *Cal. State Series Physiology and Hygiene*, *Gulick's Hygiene Series, I, Good Health*.

### SIXTH GRADES.

Absorption and circulation, with effects thereon of stimulants and narcotics.

Respiration and perspiration, with effects thereon of stimulants and narcotics.

The muscular system, structure, uses, hygiene, growth, exercises, etc., with effects thereon of stimulants and narcotics.

Books for teacher's desk: *The Hygiene of the School Room*, by W. F. Barry, M. D., *Cal. State Series Physiology and Hygiene*, *Gulick's Hygiene Series, I, Good Health*.

## SEVENTH GRADES.

1. Foods and Cooking (p. 134.)
2. Mixed diet beneficial.
3. Regularity in eating and sleeping.
4. Review some of the simple laws of health.
5. Care of the teeth.
6. Care of the eyes.
7. Accidents, dangers, and simple aids to the injured.
8. The lungs and respiration.
9. Skin and kidneys.
10. Eye and Ear.
11. Throat and voice.
12. The nervous system.
13. Review the subject of hygiene.

Books for teacher's desk: *Applied Physiology*, by Frank Overton, M. D., *Cal. State Series Physiology and Hygiene*, *Our Bodies and How we Live*, by A. F. Blaisdell, *Gulick Hygiene Series, Vol. IV, Physiology*.

## EIGHTH GRADES.

Review work of Seventh Grade. The study of the previous grades has been dealing largely with personal hygiene. The work of the Eighth Grade should deal mainly with the factors in social hygiene or public sanitation. This work should, as far as possible, correlate with the Eighth Grade Civics. The following topics and suggestions are offered for the work of this year:

**MICRO-ORGANISMS.**—In our demands for cleanliness, both as individuals and as citizens, we now must take into account many of the minute organisms known as bacteria, yeasts and molds, for we are coming to recognize the fact that they are of the utmost importance to us in our every-day life as well as of vital importance to the physician. We have heard so much of the harmful effects of a few of these bacteria that we often lose sight of the tremendous benefits of the vast majority of

these forms. Let us then, in our work, try to give the children an acquaintance with this subject that may serve them in their every-day life. In order to do this we must acquaint them with the group of colorless plants to which these minute forms belong, so they will know something of the method of growth and the formation of spores. First study the larger fungi, as the mushrooms, toadstool, puff-balls, etc. Finding the parts, the spores, the conditions favoring their growth, etc. Unlike the green plants, they thrive best in dark places, where the food is of an organic nature.

1. **Molds.** Collect as many varieties of mold as possible and from all available sources, bread, cheese, fruit, etc., so that the characteristic white, thread-like masses will become familiar. Later these will send up the spore stalks, changing, as the spores ripen, to green, blue, brown or black, as the case may be. Grow these molds under various conditions to discover those most favorable to the growth. What foods are liable to mold? How do molds affect food as to taste, smell, etc.? How can we protect our food from these molds?

2. **Yeasts.** This is a plant producing fermentation, changing a sweet solution into alcohol. How do we get the yeasts to begin with? How do we make use of this plant? Study bread-making and the work of yeast. Test in dilute fruit juice and see the effects; discover the presence of alcohol and carbon dioxide gas. What conditions favor fermentation? How can we prevent it in our foods?

3. **Bacteria.** What are bacteria and how do they work? Where are they found? In the air, water, soil, food, body, etc. What conditions favor their growth? Dark, sheltered, moist, warm places, usually.

(A) Useful bacteria.

1. Dairying; milk, butter, cheese.

2. Industries; linen, hemp, jute, sponges.

3. Agriculture; fertilizing the soil by fixing of nitrogen; see the nodules on the roots of any of the legumes and learn of the work of the U. S. Agricultural Station. Read article on Inoculating the Ground in the *October Century*, 1904, and get Government Bulletins.

4. Scavengers.

5. Fermentation; vinegar.

## (B) Harmful Bacteria.

## 1. Ferments.

2. Disease germs. What do we mean by contagious and infectious disease? What are some of the diseases caused by bacteria that we should know of? Diphtheria, tuberculosis, etc. How do these disease germs or bacteria get into the body? Through the nose, mouth, and the skin, in the food, water, milk, dust, and through the bite of insects as the fly and mosquito. This work of the mosquito is so important that it demands attention. The children should be instructed in the methods of destroying the larvæ of these insects, and this will necessitate the study of the life history, if it has not already been done, and the children should be able to distinguish between the common culex and the malaria-bearing Anophalese.

## (C) Methods of combating disease bacteria.

## 4. Personal hygiene.

Give special attention to the care of the body, emphasizing at all times the power of the healthy body to resist disease. Care of the teeth, bathing, dressing, ventilating, heating, sweeping, use of public drinking cups, books, pencils, wetting the fingers in turning pages, picking the nose, spitting, and the many things that will naturally arise in the schoolroom. The personal use of common antiseptics. Have the children draw up their own list of "don'ts."

## 5. Domestic Hygiene.

Under this head will come a study of the care of foods, the proper disposal of garbage, sewage, and anything that makes for the well-being of the family. Teach the simple use of disinfectants, and the proper care in the case of contagious diseases. Correlate with lessons in cooking.

## 6. Municipal Hygiene.

What is your city doing to insure the health of its citizens? Study the city ordinances to see what is done to secure good sewage, pure food and milk, the proper disposal of garbage, to keep the streets clean and to prevent as far as possible indiscriminate spitting, and the local quarantine. Keep in touch with the work of the Board of Health.

## 7. National Hygiene.

What is the government doing to protect the health of her citizens? The pure food laws and the inspection of foods, the quarantine stations, etc.

Books for teacher's desk: A. F. Blaisdell, *Our Bodies and How We Live*; *California State Series Physiology and Hygiene*; *Gulick Hygiene Series, III, Town and City*.

Let the work of this grade be largely by reading, observation and class discussion. When necessary, conduct class excursions so that the children may actually see what the city is doing for social hygiene.

The State Text-book in Physiology is made the basis of the work in the eighth grade. Pupils are not required to buy the book, but may be urged to do so. It is a good book for the pupils to own, and a good book to have in the homes.

## THE SUGGESTED TIME SCHEDULE.

### INTRODUCTION.

A suggested time schedule is here given according to the importance and difficulty of the subjects. The time named indicates the portion of the teacher's time in school to be devoted to instruction in each subject. Teacher's preparation must be made outside of school hours.

Departure from the time schedule may be made when the conditions require it but too wide divergence is not wise, as the work of the course as arranged might not be covered. Free time in each grade may be given to subjects in which pupils are backward or to groups of backward pupils.

Opening exercises shall consist of reading, recitation, song or talk that shall enthuse the pupils for the day's work. It requires forethought as it is the most important ten minutes of the day.

Reading is the important work of the first three years as it prepares the pupil for self-help in all subsequent work.

The teacher should arrange the daily program so as to correlate subjects. No one subject is ever taught entirely by itself. The subjects should do "team work."

Within two weeks of the opening of school the program for each room **MUST BE ON FILE IN THE OFFICE APPROVED BY THE PRINCIPAL.** Each teacher will make her own program aided by the time schedule and subject to the principal's approval.

Whenever a teacher has two grades, work may be combined in music, drawing, penmanship, spelling, nature study, and the writing of compositions; but recitations must be separate in all other subjects. When the teacher has but one grade, the class must be taught in two sections in reading and arithmetic, and may be divided in other subjects at the teacher's option. Several sections are recommended in the first and second grades.

Daily programs should show study periods as well as recitations for pupils.

A recitation in a single subject should usually not exceed twenty minutes in the first and second grades, twenty-five minutes in the third and fourth grades, and thirty-five minutes in the fifth, sixth, seventh and eighth grades.





## SUGGESTED TIME SCHEDULE FOR

| SUBJECTS.                           | FIRST GRADE.                              | SECOND GRADE.                             | THIRD GRADE.                             | FOURTH GRADE.                            |
|-------------------------------------|-------------------------------------------|-------------------------------------------|------------------------------------------|------------------------------------------|
| Opening Exercises.                  | 10 minutes, daily.                        | 10 minutes, daily.                        | 10 minutes, daily.                       | 10 minutes, daily.                       |
| Reading and Literature.             | 150 minutes, daily.                       | 115 minutes, daily.                       | 85 minutes, daily.                       | 65 minutes, daily.                       |
| Language Study.                     | 20 minutes, daily.<br>With Reading.       | 20 minutes, daily.<br>With Geography.     | 25 minutes, daily.                       | 25 minutes, daily.                       |
| Spelling.                           |                                           | 15 minutes, daily.                        | 15 minutes, daily.                       | 15 minutes, daily.                       |
| Penmanship.                         | Movement exercises<br>as busy work.       | 15 minutes, daily.                        | 15 minutes, daily.                       | 15 minutes, daily.                       |
| Arithmetic.                         | 30 minutes, daily.                        | 30 minutes, daily.                        | 30 minutes, daily.                       | 40 minutes, daily.                       |
| Geography.                          |                                           | With Language.                            | 75 minutes, per wk.                      | 20 minutes, daily.                       |
| History and Civics.                 |                                           |                                           |                                          | 30 minutes, daily.                       |
| Nature Study.                       | 40 minutes per wk.                        | 30 minutes per wk.                        | 40 minutes, per wk.                      | 40 minutes, per wk.                      |
| Physiology and Hygiene.             | Occasional talks.                         | Occasional talks.                         | Occasional talks.                        | Occasional talks.                        |
| Manual Training & Domestic Science. | Occasional talks.                         | Occasional talks.                         | Occasional talks.                        | Occasional talks.                        |
| Music.                              | 20 minutes, daily.                        | 15 minutes, daily.                        | 60 minutes per wk.<br>Singing daily.     | 60 minutes per wk.<br>Singing daily.     |
| Drawing.                            | As busy work.                             | 20 minute lessons.<br>Three times a wk.   | 20 minute lessons.<br>Three times a wk.  | 20 minute lessons.<br>Three times a wk.  |
| Calisthenics.                       | 10 minutes, daily.<br>Twice each session. | 10 minutes, daily.<br>Twice each session. | 10 minutes, daily.<br>Once each session. | 10 minutes, daily.<br>Once each session. |
| Recess.                             | 20 minutes, daily.                        | 20 minutes, daily.                        | 20 minutes, daily.                       | 20 minutes, daily.                       |
| Total hrs. School per week.         | 22 hrs., 30 min.                          | 22 hrs., 30 min.                          | 22 hrs., 30 min.                         | 22 hrs., 30 min.                         |
| Total Time assigned per week.       | 22 hrs., 20 min.                          | 22 hrs., 20 min.                          | 21 hrs., 25 min.                         | 21 hrs., 25 min.                         |
| Unassigned Time per week.           | 10 minutes.                               | 10 minutes.                               | 1 hour, 5 min.                           | 1 hour.                                  |

# DAY ELEMENTARY SCHOOLS.

| GRADE.       | FIFTH GRADE.                             | SIXTH GRADE.                          | SEVENTH GRADE.                        | EIGHTH GRADE.                         |
|--------------|------------------------------------------|---------------------------------------|---------------------------------------|---------------------------------------|
| ily.         | 10 minutes, daily.                       | 10 minutes, daily.                    | 10 minutes, daily.                    | 10 minutes, daily.                    |
| ily.         | 50 minutes, daily.                       | 50 minutes, daily.                    | 50 minutes, daily.                    | 50 minutes, daily.                    |
| ily.         | 30 minutes, daily.                       | 30 minutes, daily.                    | 30 minutes, daily.                    | 30 minutes, daily.                    |
| ily.         | 20 minutes, daily.                       | 75 minutes per wk.<br>(3 lessons.)    | 60 minutes per wk.<br>(3 lessons.)    | 60 minutes per wk.<br>(3 lessons.)    |
| ily.         | 15 minutes, daily.                       | 15 minutes, daily.                    |                                       |                                       |
| ily.         | 50 minutes, daily.                       | 50 minutes, daily.                    | 50 minutes, daily.                    | 50 minutes, daily.                    |
| ily.         | 25 minutes, daily.                       | 30 minutes, daily.                    | 30 minutes, daily.                    | 30 minutes, daily.                    |
| wk.          | 45 minutes per wk.                       | 30 minutes, daily.                    | 30 minutes, daily.                    | 30 minutes, daily.                    |
| wk.          | 40 minutes per wk.                       | 40 minutes per wk.                    | 40 minutes per wk.                    | 40 minutes per wk.                    |
| ks.          | 30 minutes per wk.                       | 30 minutes per wk.                    | 30 minutes per wk.                    | 30 minutes per wk.                    |
| ks.          | Occasional Talks.                        | Occasional Talks.                     | 90 minutes per wk.<br>One lesson.     | 90 minutes per wk.<br>One lesson.     |
| wk.<br>y.    | 60 minutes per wk.<br>Singing daily.     | 60 minutes per wk.<br>Singing daily.  | 60 minutes per wk.<br>Singing daily.  | 60 minutes per wk.<br>Singing daily.  |
| ons.<br>wk.  | 30 minute lessons.<br>Two times a wk.    | 35 minute lessons.<br>Two times a wk. | 35 minute lessons.<br>Two times a wk. | 35 minute lessons.<br>Two times a wk. |
| ily.<br>ion. | 10 minutes, daily.<br>Once each session. | 10 minutes, daily.<br>Twice each day. | 10 minutes, daily.<br>Twice each day. | 10 minutes, daily.<br>Twice each day. |
| ily.         | 20 minutes, daily.                       | 20 minutes, daily.                    | 20 minutes, daily.                    | 20 minutes, daily.                    |
| n.           | 25 hrs.                                  | 25 hrs.                               | 25 hrs.                               | 25 hrs.                               |
| n.           | 23 hrs., 5 min.                          | 25 hrs                                | 25 hrs.                               | 25 hrs.                               |
|              | 1 hr., 55 min.                           |                                       |                                       |                                       |













